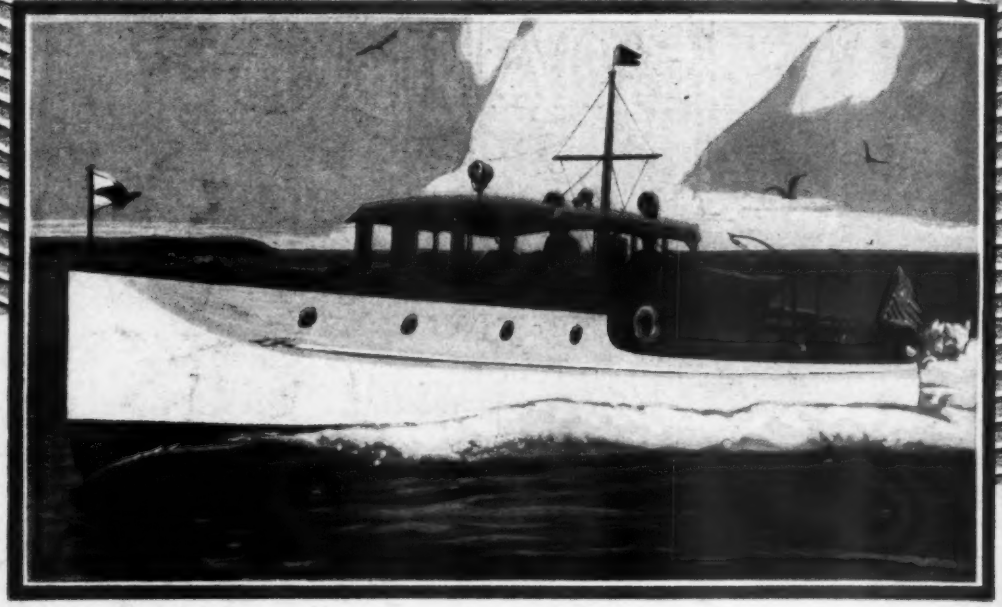
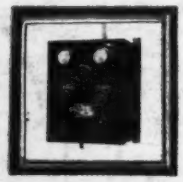
The Yachtsmen's Magazine
April
1930
MOTOR BOATING
50 Cents
FITTING-OUT NUMBER

DON'T LET LAST YEAR'S SPARK-PLUG WIRES ROB YOUR ENGINE OF POWER



G-E *lacquered* IGNITION CABLES GIVE NEW ENERGY



Tungar
REG. U.S. PAT. OFF.
BATTERY CHARGER

Tungar in the boat-house makes battery charging simple, economical. Three sizes... for one-day or ordinary rate charging—6-Battery size, $45; 15-Battery size, $75; 30-Battery size, $135. (Net east of the Rockies.)

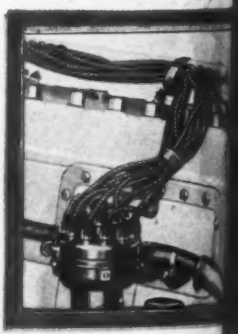
In the Spring boat overhaul, *think of your ignition cables.* Weakened by engine heat, water, oil, high-voltage strain, *weather*—old wires leak current. Don't be deceived if they *look* sound. Kink one sharply. Fine insulation cracks will tell you!

G-E *Lacquered* Ignition Cables stop those insidious leaks. They're rubber and braid insulated wires jacketed in *12 coats* of tough, flexible lacquer... lacquer endorsed by General Electric research... lacquer that defeats enemies of ignition.

These G-E Lacquered Ignition Cables deliver full voltage to spark-plugs. You get better combustion... less carbon... less "cutting" of lubricating oil by unburned fuel.

These cables... with hard, sleek little *Textolite* Caps snugly covering every terminal... make any engine splash-proof, weather-proof, more dependable.

Get them from G-E Automotive Distributors everywhere—from your supply store—or USE THE COUPON!



Section A-534, Merchandise Dept.,
General Electric Co., Bridgeport, Conn.

Please tell me more about
—G-E Lacquered Ignition Cables
—Textolite Caps
—Tungar Battery Chargers

Name.....

Address.....

GENERAL ELECTRIC

MERCHANDISE PRODUCTS

MERCHANDISE DEPARTMENT GENERAL ELECTRIC COMPANY · BRIDGEPORT

Electric-starting Outboard Runabouts

Offer You Performance Never Possible Before in Deep or Shallow Waters

HERE in Johnson Aquaflyers is the luxury of finest large runabouts, at a fraction of their cost, and performance no other kind of motor boat can equal.

With a propeller that tilts safely over logs, rocks and other obstructions, the Aquaflyer travels in shallow water and even penetrates snag-infested streams, doubling your cruising range and adding untold pleasure to motor boating.

On the wide lake, too, its advantages are equally pronounced. A touch of the wheel turns the whirling, power-driven propeller instead of a trailing rudder. You can bank the most amazingly sharp turns, adding new thrills to the sheer pleasure of water motoring.

The electric-starting Sea-Horse motor, completely concealed and silenced in the stern, drives you through the water at average motor car speeds. Absence of bulky engine makes the usable space 30% greater than regular motor boats.

All controls are grouped at the driver's hand. Deep luxurious upholstery, streamline fittings and smart color combinations make the Johnson Aquaflyer as racy as a modern roadster.

Write for color-illustrated catalog today.

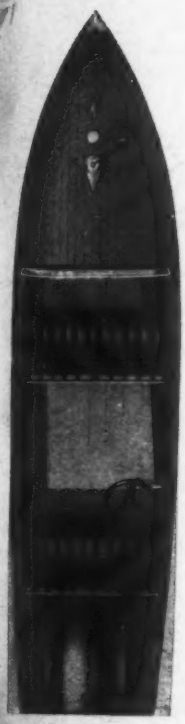
JOHNSON MOTOR CO., 3004 Pershing Rd., Waukegan, Ill.
In Canada: Canadian Johnson Motor Co., Ltd., Peterboro, Ont.

JOHNSON AQUA FLYERS

Built by the World's Largest Manufacturer of Outboard Motors and Matched Units

17½-foot De Luxe Runabout

Seamless, waterproof Sealite construction, V-bottom. True speed up to 25 m. p. h. with electric-starting Sea-Horse "32," $995; with electric-starting Sea-Horse "16," $925. All prices f. o. b. factory.



20-foot Family Runabout

One-half inch Philippine mahogany, Prestite construction, round bilge bottom. True speed up to 22 m. p. h. with electric-starting Sea-Horse "32," $1065, f. o. b. factory.

MoToR Boating, April, 1930. Volume XLV, No. 4. Published monthly at 57th Street at Eighth Avenue, New York, U. S. A., by International Magazine Co., Inc. Yearly subscription price: United States, $3.00; Canada, $3.00; Foreign, $4.00. Entered as second-class matter April 15, 1925, at the Post Office at New York, under the act of March 3, 1879. (Printed in U. S. A.)

Good news travels fast. Knowledge of Edward Smith Paints and Varnishes has spread to owners of fine boats in almost every foreign country. Indeed, Edward Smith Marine Specialties are rapidly assuming the same position of quality leadership abroad which they occupy at home. Supreme quality is universally appreciated.

ON the spars, on the deck, on the hull—Edward Smith Aquatite Spar Varnish remains beautifully lustrous long after ordinary varnishes have lost their youth! Made of only hard fossil gums and finest oils, aged for durability and backed by 103 years of knowing how. Try this famous varnish or the equally brilliant and long-lived Smith Spar Coating. Also makers of Bottom Green, Deck Buff, Aquatite Spar, Spar Coating. Send for literature.

EDWARD SMITH & COMPANY

LONG ISLAND CITY
NEW YORK

▼

Makers of Marine Paints and Varnishes since 1827

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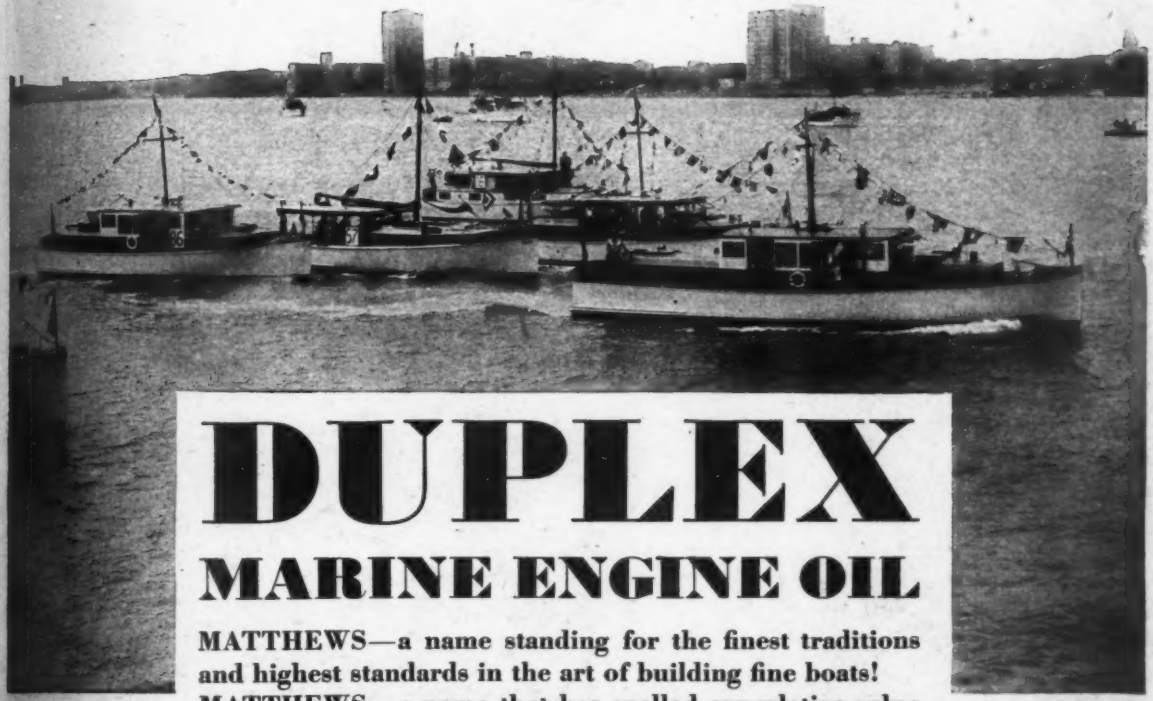
Matthews *specify*



DUPLEX
MARINE ENGINE OIL

MATTHEWS—a name standing for the finest traditions and highest standards in the art of building fine boats!
MATTHEWS—a name that has spelled superlative value to two generations of yachtsmen!
MATTHEWS—representative of the highest and finest standards of material! And for four years Matthews cruisers have gone to their proud owners with instructions that "new engine efficiency will be maintained by the use of *Duplex Marine Engine Oil.*"

***In the words of the Matthews Company:* "*Duplex Marine Engine Oil* is recommended unqualifiedly for use in the power plants of every Matthews Cruiser."**

Manufactured by
ENTERPRISE OIL COMPANY
Established 1884
BUFFALO, NEW YORK
Makers also of Kasson Waterproof grease

WHOLESALE DISTRICT DISTRIBUTORS IN
Baltimore Boston Chicago Cleveland Detroit Houston Miami New Orleans New York Palm Beach Philadelphia St. Louis
Pacific Coast Distributors: Portland, *Beebe & Co.;* San Diego, *R. V. Morris & Co.;* San Francisco, *B. H. Hebgen Co.;* Seattle, *Sunde & d'Evers Co.;* Vancouver, *Hoffars, Ltd.;* Wilmington (Calif.), *Ets—Hokin & Galvan*

DEALERS WHEREVER BOATS FLOAT

Nothing *Finer* Can Be Said of Any Motor Boat Than, It is -

LYCOMING MOTORS

LYCOMING MANUFACTURING CO.
WILLIAMSPORT, PENNSYLVANIA

It is significant that Dodge Boats are exclusively powered by Lycoming Marine Engines

Advertising index will be found on 3rd last page

TYPE 356

TYPE 145

Typical Pioneer Marine Compasses. Both top-reading and side-reading types are available

Back To Meridian in 30 Seconds

Pioneer Marine Compasses not only stand up under the shock and vibration which they encounter on fast boats, but are remarkably stable.

A quick turn will of course throw off any compass, but the Pioneer will be back on meridian almost as soon as the boat is straightened out on its new course. It never takes more than 30 seconds to settle to meridian after the most severe manoeuver. Pioneer Marine Compasses—like Pioneer Aircraft Compasses—are extremely accurate, steady under all conditions, and easy to read by day or night.

Every Pioneer Marine Compass is equipped with the famous Titterington Micrometer Compensator, an exclusive Pioneer feature. This compensator is entirely self-contained and eliminates the loose magnets which have heretofore provided the only satisfactory means of compass compensation.

To insure long life Pioneer Compasses are highly damped, equipped with jewelled pivot bearings, and so built that the interior cannot become discolored. They are made in sizes and designs to meet every marine requirement.

TYPE 356. Mounts flush in a vertical panel. Diameter of card 2⅜" $60

TYPE 145. Mounts on vertical or horizontal surface. Can be read from top or side, front or back. Diameter of card 3½" $65

TYPE 383. Similar to type 145. Vertical card only. Diameter of card 2⅜" $50

TYPE 518. Similar to type 145. Vertical card only. Diameter of card 3½" $55

Radium illumination included on all Pioneer Compasses. Indirect lighting is included on types 356, 383 and 518 at $5 extra. The full line of Pioneer Marine Instruments includes:

Air Speed Indicator . . . Ammeter . . . Barometer . . . Clock . . . Fuel Flow Meter . . . Fuel Level Gauge . . . Fuel Pressure Gauge . . . Fuel Strainer . . . Hand Fuel Pump . . . Navigation Watches Octant . . . Oil Pressure Gauge . . . Sextant . . . Tachometer . . . Thermometer.

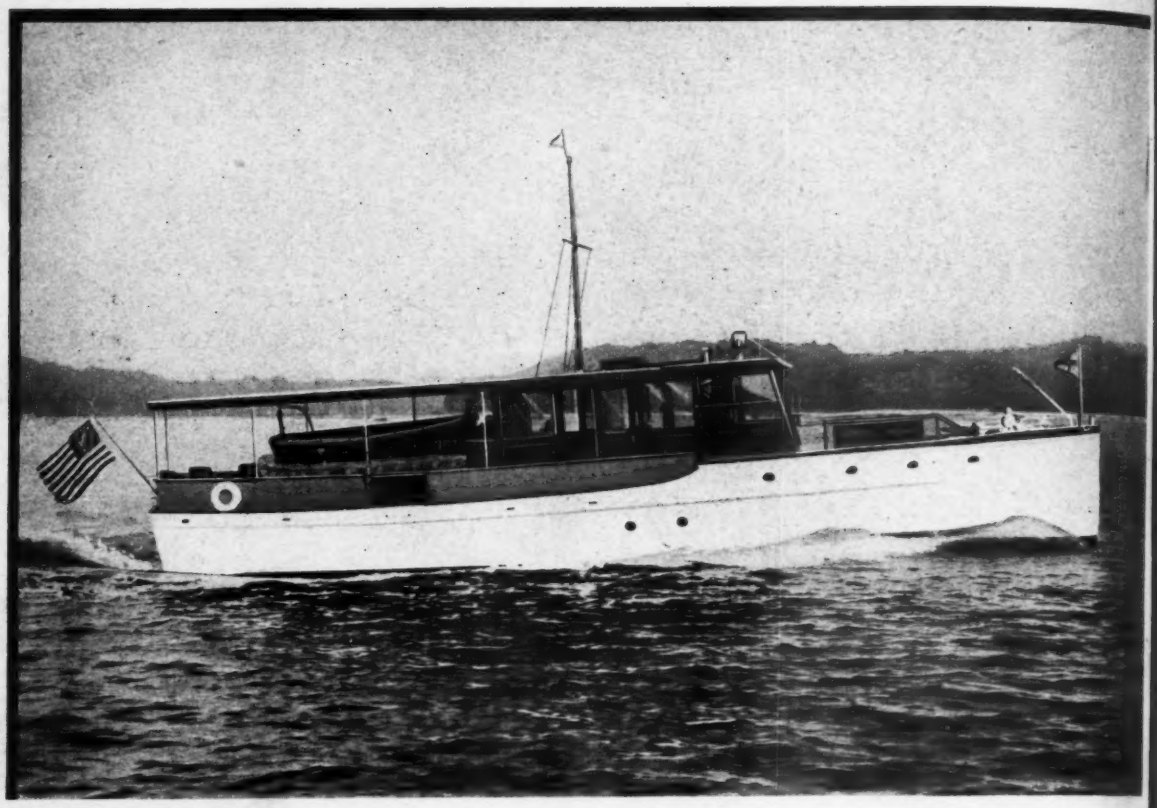
Write for catalogue.

PIONEER INSTRUMENT COMPANY

DIVISION OF BENDIX AVIATION CORPORATION

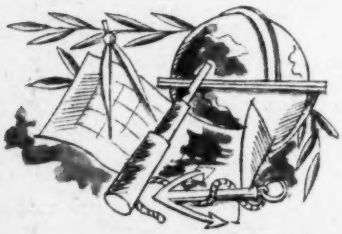
4 LEXINGTON AVENUE . BROOKLYN NEW YORK

DEARBORN BLDG., DEARBORN • 639 SO. SAN PEDRO, LOS ANGELES • 15 SPEAR ST., SAN FRANCISCO • 420 W. DOUGLAS ST., WICHITA • 8034 W. 63RD ST., CHICAGO
SUSSEX ST., OTTAWA • STERNPLATZ 13, JOHANNISTHAL-BERLIN • GENERAL EUROPEAN REPRESENTATIVE, H. CALDERARA, 11 BIS RUE MONTAIGNE, PARIS, FRANCE



THE ELCO 50-FOOT MOTOR YACHT

The Heart of a Cruiser



Nothing can destroy the pleasure of a cruise so thoroughly as even a hint of doubt concerning the motor. . . . Elco motors are Elco-built. They are especially designed for permanent reliability. . . . It is common practice among motor manufacturers to give a complete test only to every tenth or twelfth motor. But *each* Elco motor is placed on a block and scientifically tested in the shop for precision and power before it is installed. . . . Elco motors have a sliding transmission reverse gear with plate clutch, enabling full speed astern—a feature which makes it possible to stop dead in a boat length from full speed ahead. . . . Elco motors give service for many years—recently an old Elco customer had a 1911 motor, which had been in steady use, installed in a new boat. . . . A light annual overhaul is usually all the attention that Elco motors require—on the average, a complete overhaul is needed only once each five years. . . . In short, Elco motors are built not for flashy, short-lived performance, but to propel Elco Cruisers safely and surely through many thousands of miles of water.

VISIT PORT ELCO

You are invited to visit Port Elco, 247 Park Avenue (at 46th Street), New York, where the entire Elco Fleet is on permanent display. Or, address Dept. MBG, Port Elco, for full particulars and descriptive literature. (Plant and Marine Basin at Bayonne, N. J.)

ELCO CRUISERS ARE ALSO DISPLAYED, SOLD AND SERVICED BY:

Port Elco of Boston, State and Broad Sts. Boston, Mass.

Washington Motor Boat Sales Agency, 1344 Connecticut Ave., Washington, D. C.

Ludington Aircraft, Inc, Atlantic Building, Philadelphia, Pa.

Yacht and Motor Sales Corp., Wilmington, Calif.

Eastern Marine & Yacht Co., 354 Howard Ave., Bridgeport, Conn.

Roy M. Brewster, Bay Shore, Long Island, N. Y.

W. J. H. Dyer, East Greenwich, R. I.

Frank D. Homan, Amityville, Long Island

THE ELCO FLEET

TWENTY-SEVEN FOOT MARINETTE	$3475
THIRTY FOOT VEEDETTE	$5750
THIRTY-FIVE FOOT CRUISETTE	$7750
THIRTY-EIGHT FOOT CRUISER	$11,850
FORTY-TWO FOOT CRUISER	$17,500
FIFTY FOOT MOTOR YACHT	$26,500

(Elco operates a liberal financing plan for those wishing to purchase cruisers out of income.)

Aflost Bayonne, N. J.

Elco

THE WATER-MARK OF QUALITY

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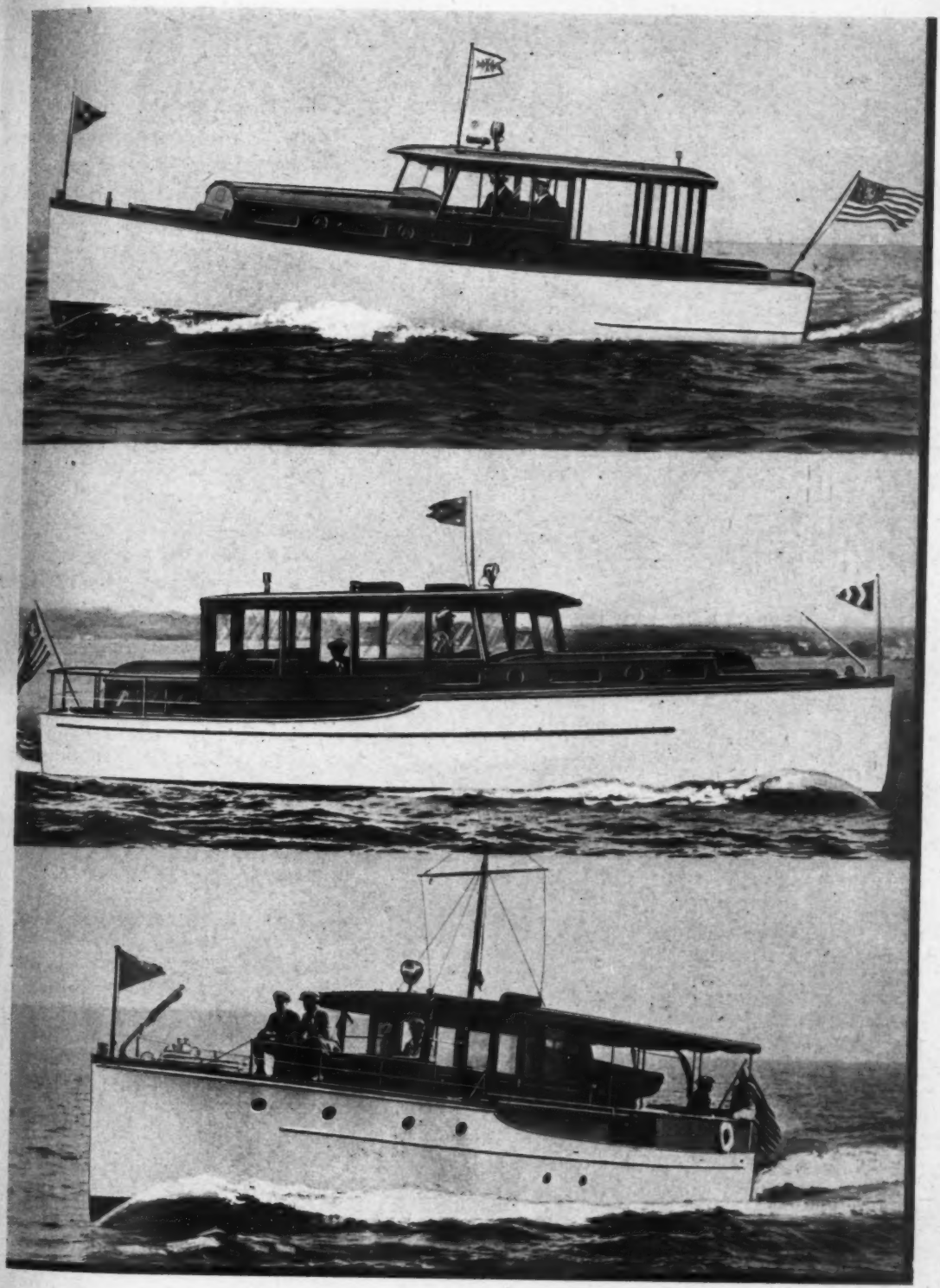

CRUISERS

At top—The Elco 35-foot Cruisette
Center—The Elco 38-foot Cruiser
Below—The Elco 42-foot Cruiser

HAND WROUGHT

For Years of Use . . for Staunchness too . . and Keener Cruising Comforts!!

Quality workmanship and elegance of detail and design are uppermost in the fabrication of Robinson Seagull Cruisers and Commuters. No frenzied production rush restricts the impressive seaworthiness of these boats—or retards their years of owner usefulness. No cheapened materials, no slip shod workmanship enter any part or portion of a Robinson hull. You are personally invited to visit Benton Harbor—see the Robinson methods as they are actually practiced—have the various features of their stout construction pointed out to you—the superior "why" of Robinson design concisely and conclusively revealed. Robinson owners are united in this one opinion—"You may surrender yourself to any one of the four sturdy models . . . secure in their staunchness and real speed supremacy."

39 foot Sedan Cruiser—speeds from 32 to 45 m. p. h., $14,500 and up. 39 foot Sport Sedan—speeds from 32 to 45 m. p. h., $14,300 and up. 40 foot Speed Cruiser—speeds from 28 to 38 m. p. h., $14,500 to $16,500, with twin screw power, $16,800 to $17,800. 45 foot Custom Commuter with single or double cabin, twin screw powered—speeds up to 38 m. p. h., $30,000 to $32,500.

ROBINSON Seagull CRUISERS

ROBINSON MARINE CONSTRUCTION CO., BENTON HARBOR, MICHIGA

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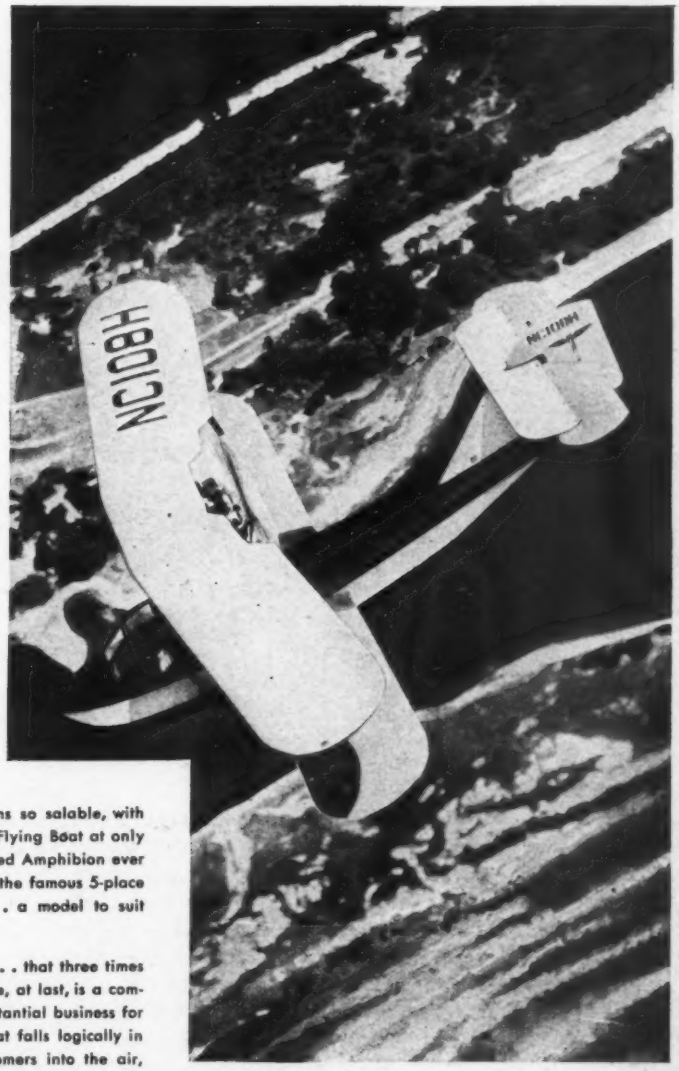
Pacemakers of Amphibion Design offer the Motor Boat Dealer...

4 FLYING SHIPS

FOR EVERY PURSE!



Never has any manufacturer provided a line of Amphibions so salable, with such tremendous potential profit for the dealer! A 2-place Flying Boat at only $4,890 . . . a 2-place Amphibion at $5,550, the lowest priced Amphibion ever produced . . . a new 4-place Amphibion at $18,000 . . . and the famous 5-place Ireland Amphibion at the new reduced price $23,000! . . . a model to suit every air-minded purse!

Leading authorities agree that 1930 is an Amphibion year . . . that three times as many Amphibions will be sold this year as last. And here, at last, is a complete line of Amphibions . . . at prices that mean solid, substantial business for dealers who qualify for the Ireland Franchise . . . a line that falls logically in your own field . . . that will enable you to take your customers into the air, while continuing to serve them on the water!

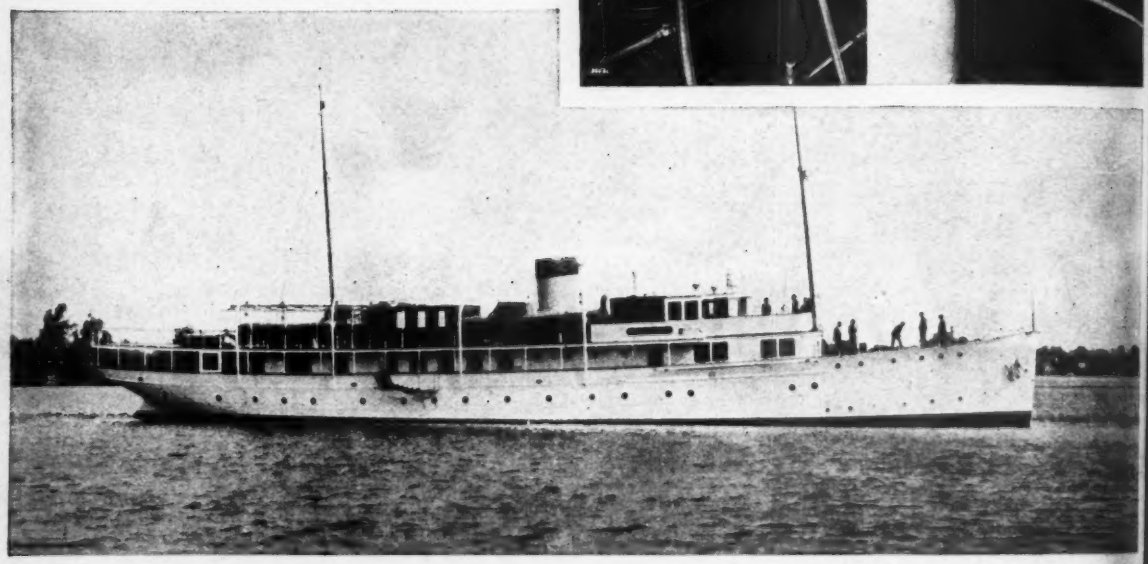
There are liberal profits for you in the broad, prosperous market opened up in the yachting field by the 1930 line of Ireland Amphibions . . . and we extend every co-operation . . . help you organize to sell aircraft . . . to service them . . . to arrange flying instruction for your customers . . . support you with consistent, sales-inducing advertising in magazines and direct by mail.

Established motor boat dealers of substantial financial standing are invited to communicate at once with Ireland Aircraft, Inc., Garden City, Long Island, New York

IRELAND AMPHIBIONS

The Designers *of the* Olive K

CHOOSE EXIDES



SYNCHRONIZING motors to reduce vibration. Dial telephone-radio-phonograph system. Latest, most modern equipment. These are a few of the things that make the Olive K the outstanding boat of the year. In fact, it is said that developments on this new 170-foot yacht have advanced yacht engineering ten years.

New battery operation system

The owner and the designers sought for the most efficient, most up-to-date equipment. Naturally, they chose Exide-Ironclad Batteries for the electrical requirements, and they installed them to operate in a manner new in yachting circles.

In this new system the batteries are floated in one series across the main bus . . . with suitable generator adjustment. This enables the battery to function instantly and automatically in case of emergency—generator failure. The battery also absorbs peak loads on the generator, thus avoiding, to a great extent, fluctuating lights. Whenever the generators are in operation they automatically charge the battery. Thus Exides are ready at all times to meet the Olive K's every electrical need; to do its jobs steadily, reliably, and economically.

Write for "The Yachtsman's Battery" for more details. Mail your note to-day. No obligations.

The OLIVE K, latest development in the pleasure craft field. 170 foot LOA designed by Cox and Stevens, Inc., and John H. Wells, Inc.; built by Defoe Boat and Motor Works; equipped with reliable Exide-Ironclad Marine Batteries.

ON THE JOB EVERY MINUTE. Top picture shows battery room of the Olive K. This 56-cell Exide-Ironclad Marine Battery is ready at all times to meet every electrical requirement on this remarkable new boat.

Exide
MARINE
BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

THE WORLD'S LARGEST MANUFACTURERS OF STORAGE BATTERIES FOR EVERY PURPOSE

Exide Batteries of Canada, Limited, Toronto

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Sea Crest

Outboard Tachometer

Easily readable large dial with heavy plate cover glass and polished water-proof case. Special mounting plate for attachment to dash—permits easy adjustment to proper reading angle and removal of tachometer when not in use. Special right-angle type ball bearing motor attachment. Exclusive feature—six ft. braided bronze flexible tubing with special process monel wire cable.

Marine Tachometer

Single-Unit Feed-A-Motor

Feed-A-Motor is an electrically driven fuel pump. Feeds engine any required capacity of fuel up to 18 gallons per hour. Parts made of brass, bronze, and Monel metal. Also double unit available.

Tune Up!

The Winter is breaking up, and warm breezes will soon be calling speed-boats down the ways and out over the sun-lit waters.

On every speed boat that gallops along there should be instruments of finest quality and a panel significant of the care its owner possesses for the fine performance of his craft and the appearance of his cock-pit. Consolidated Instruments and Consolidated Panels are the new mode of the new motor-boating season.

CONSOLIDATED INSTRUMENT CO.

of AMERICA, INC.

Baltimore St. and Central Ave. - Baltimore, Md.

Divisions

Julien P. Friez and Sons, Inc., Baltimore, Md.

Molded Insulation Co. Mt. Vernon, N. Y.

Aircraft Control Corp. Philadelphia, Pa.

FACTORY BRANCH, WICHITA, KANSAS - Sales, Service and Repairs, 221 S. Lawrence St.

Consolidated Instruments

THE vernal equinox so justly celebrated by the poets, is upon us again—revealing that the human race consists of two kinds of people.

Those who, breathing deep of Springtime's earthy fragrance, tingle pleasantly at the promise of summer in the air. If they go so far as to commit themselves, the simple statement "'Tis Spring!" sums up their ecstasy.

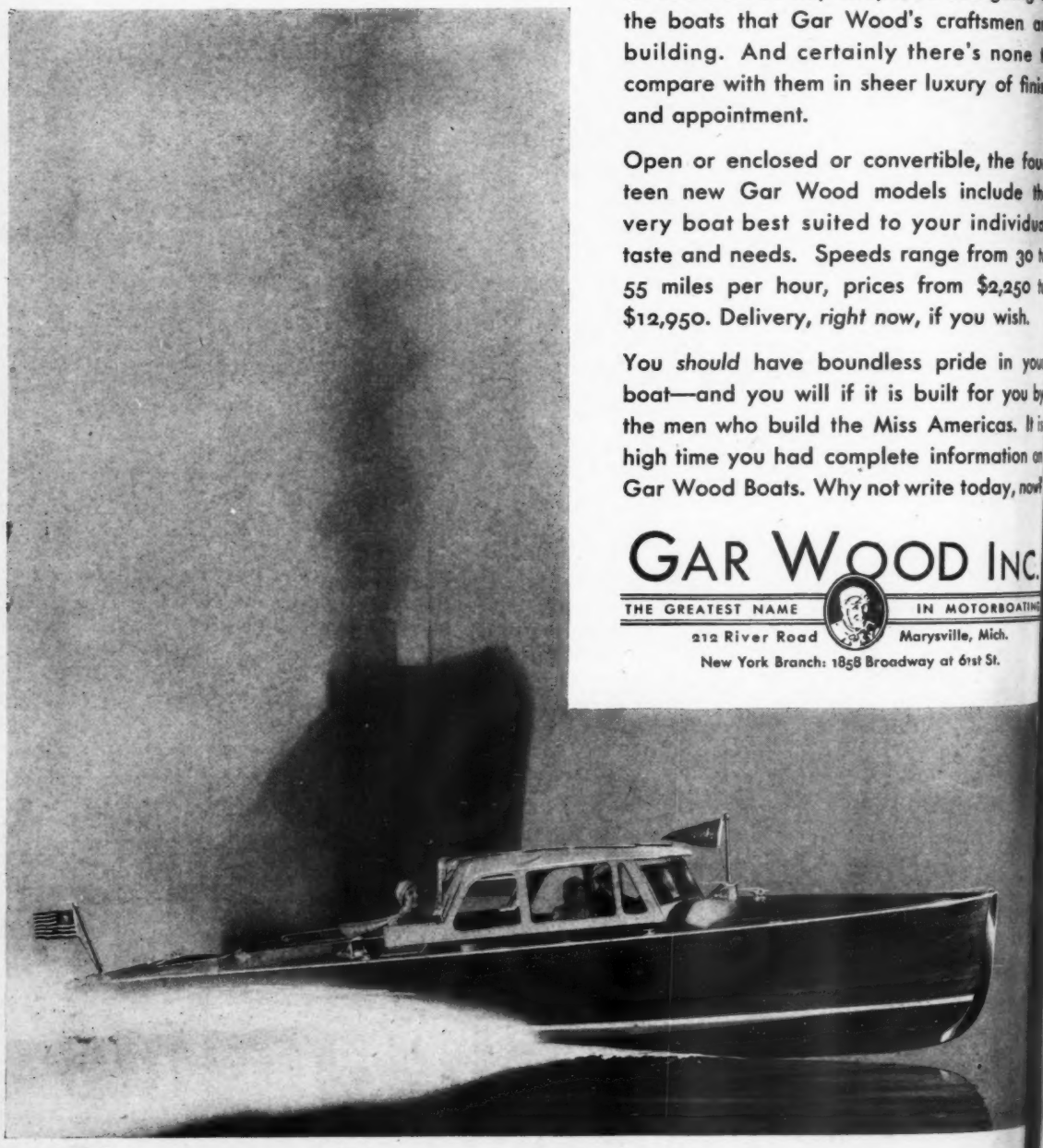
And the others, transfigured by friendly sunshine, soft breezes and fleecy clouds, murmur, "'Tis Spring, I ought to have a boat!"

If, unhappily, you should belong to the first order, there is just nothing we can do for you. But, if your Spring Song is keyed to the marimba symphony of caulking mallets, if you know no scent more devastating than attar of oakum, no blooms more sprightly than new bunting, here is the beginning of another beautiful friendship.

For, seek as you will the world over, you'll find no runabout so ship-shape, so sea-going as the boats that Gar Wood's craftsmen are building. And certainly there's none to compare with them in sheer luxury of finish and appointment.

Open or enclosed or convertible, the fourteen new Gar Wood models include the very boat best suited to your individual taste and needs. Speeds range from 30 to 55 miles per hour, prices from $2,250 to $12,950. Delivery, *right now*, if you wish.

You *should* have boundless pride in your boat—and you will if it is built for you by the men who build the Miss Americas. It is high time you had complete information on Gar Wood Boats. Why not write today, now?



GAR WOOD INC.

THE GREATEST NAME IN MOTORBOATING

212 River Road Marysville, Mich.

New York Branch: 1858 Broadway at 61st St.

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Announcing

THE 22-FOOT GAR WOOD

. . . a new *sea-going* achievement by the MISS AMERICA CRAFTSMEN

In the trim, swagger 22 footer, the builders of the Miss Americas present a new series of typically Gar Wood Boats of smaller size that are to-sell at proportionately lower prices.

In pleasing, ship-shape design, in materials, craftsmanship, and luxury of finish and appointment, this new boat duplicates the standard Gar Wood Models.

We suggest that you write for complete details and prices.

SEA-LYON

THE SEA LYON CREED OF QUALITY

To Produce—A boat of sustained high speed rather than acclaim the personal distinction of great racing prowess;

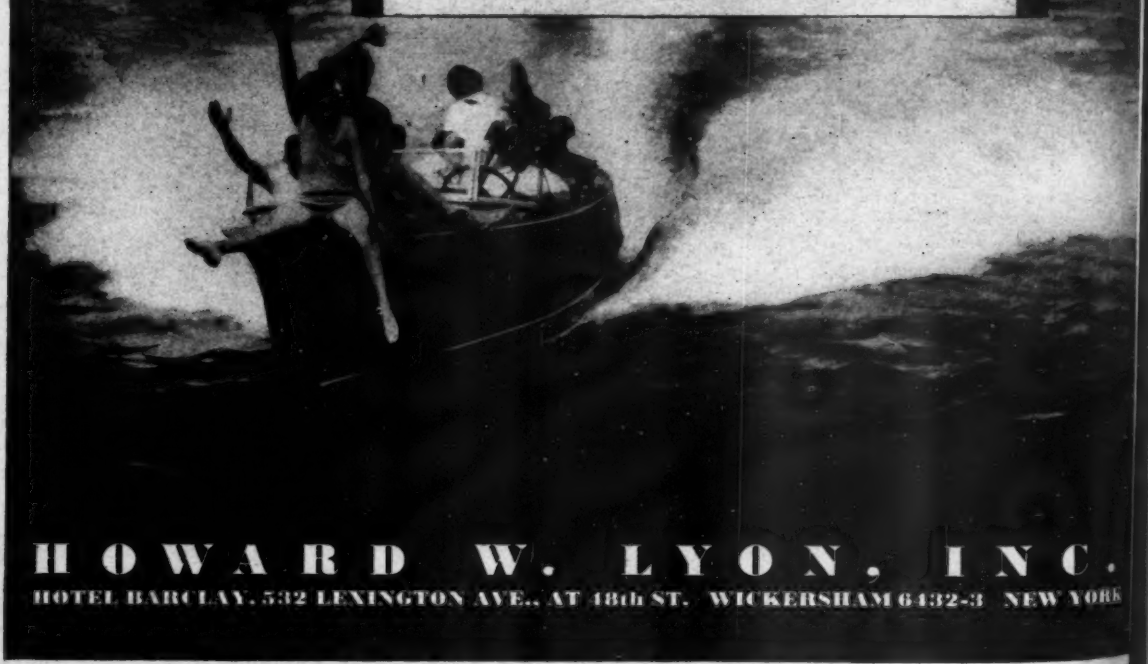
To Produce—A boat capable of exceptional performance rather than aspire merely to great production;

To Produce—A boat whose very style bespeaks its own beauty rather than unduly emphasize superficial details;

To Produce—A boat designed so faultlessly, built so soundly and priced so fairly that all men ultimately will recognize in Sea Lyon the ultimate in value.

Although 80% of Sea Lyon owners have given up other makes of boats to own a Sea Lyon, we have never heard of a single owner giving up a Sea Lyon for some other make of boat.

Let us send you
"Our Vanity Book" and the 1930 Sea Lyon catalog.
A few exclusive sales territories available.



HOWARD W. LYON, INC.

HOTEL BARCLAY, 532 LEXINGTON AVE., AT 48th ST. WICKERSHAM 6-4332-3 NEW YORK

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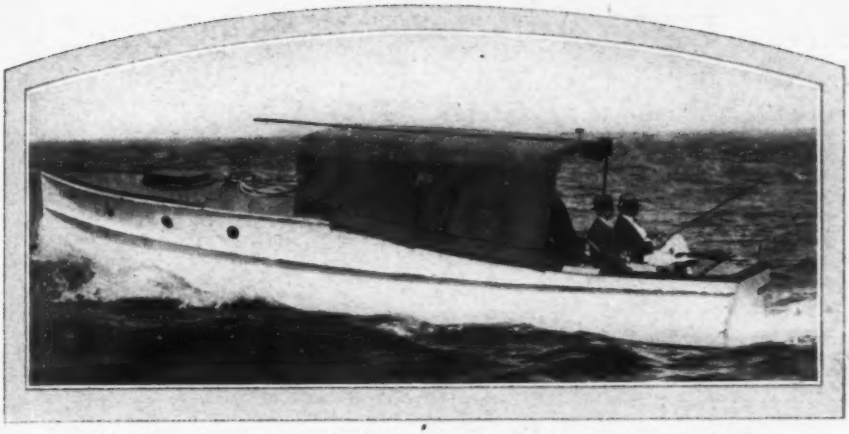

President Hoover takes a respite from arduous duties to enjoy a week of fishing in Florida sunshine with his host, Jeremiah Milbank

APRIL, 1930

Vol. XLV, No. 4

MOTOR BOATING

Edited by

CHARLES F. CHAPMAN

FIFTY-SEVENTH STREET
AT EIGHTH AVENUE
NEW YORK, N. Y.

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FEDERAL OBLIGATIONS OF DOCUMENTED YACHTS

BY CHARLES F. McKIVERGAN

ONE of the most welcome disclosures of the annual statistical reports of the United States Commissioner of Navigation is the regularity of the increase being recorded in the total number of documented yachts in the nation. Over a period of several years, each of the commissioner's reports has called attention to an increase in the number of documented pleasure vessels. The year 1929, furthermore, has been marked particularly by a large increase in such craft and has furnished the yachting sport with a high mark to be striven for in years yet to come.

The real significance of the steady increase in this class of pleasure vessels, however, becomes apparent only in the light of the fact that, for the most part, the owners of documented yachts are people of more than ordinary wealth. Documented pleasure craft, as a rule, are large and expensive vessels. Their operation costs generally are heavy enough, therefore, to restrict their ownership to only individuals of means. Hence that each year more and more people whose wealth permits them to indulge in whatever form of recreation they choose are turning to the yachting sport is an happening of real significance. It demonstrates conclusively that, as a source of pleasure and recreation, yachting has no rival in the eyes of those who are able to select their sport in an entirely unrestricted manner.

With this steady increase in the number of documented yachts, it is not at all surprising that a large number of the owners and operators of such craft are perplexed as to the actual obligations which are placed upon them by the federal marine laws. In many respects, the obligations of documented yachts are identical with those placed upon undocumented craft; in other ways, they differ radically; and there are additional restrictions which documented craft alone are called upon to meet. That there should be confusion and doubt, therefore, has been only natural and to be expected, especially among those who have aligned themselves with the sport but recently. It is hoped, however, that this explanation of the particular federal obligations of the documented craft will clear up most of the obscure points which hitherto have proved most puzzling.

To the end that the various regulations may be described in as simple a manner as possible, the requirements will be touched upon in the following order: documentation, inspection, equipment, navigation, clearing and entering, carrying passengers for hire and change in ownership.

DOCUMENTATION

Under the law, no pleasure motor yacht can be documented, that is to say licensed, by the federal authorities if she is under five (5) net tons in measurement. By the tonnage, of course, is meant the measurement volume of the vessel, one ton being equivalent to 100 cubic feet.

The determination of the tonnage is a rather complicated technical and mathematical procedure which can be carried out correctly only by those who have been trained in such work. By taking a number of measurements which are calculated according to definite rules, a skilled admeasurer computes the gross tonnage of a vessel. From this the net tonnage of the craft is computed by making proper allowances for such things as propelling power space, water ballast space, depth of frames and floors between decks, etc. The measuring work, of course, is carried out by trained government officers on all yachts which are required to be documented. Hence a thorough technical knowledge of the mathematical procedure is not necessary to the owner of a yacht ordinarily.

Though no motor yacht of less than five (5) net tons can be documented, all motor yachts which are sixteen (16) gross tons or over are required to be documented by the federal government. Furthermore, all motor yachts which are used to carry pasengers for hire on navigable waters are required to be documented if they are less than sixteen (16) gross tons but of at least five (5) net tons in measurement. In addition, the law allows the documentation of motor yachts which are not used to carry passengers for hire even if they are under sixteen (16) gross tons but more than five (5) net tons, if special permission is obtained by the owner from the Bureau of Navigation of the Department of Commerce.

It should be clear then that all motor yachts which are sixteen (16) gross tons or over are required to be documented; those under five (5) net tons are never granted a document; and motor yachts which measure between these extremes are required to be documented if they are used to carry passengers for hire and are documented only by special permission if they are not used to carry paying-passengers.

Steam yachts, on the other hand, must be documented regardless of the above tonnage restrictions.

The application for the document, or license, must be made in all cases to the collector of customs for the district in which the craft is to be documented. If the applicant has purchased the vessel from a former owner, he must be prepared to verify his ownership by a bill of sale or other evidence acceptable to the authorities.

If the craft is a new one and hence never before licensed, on the other hand, it is required that the builder furnish a certificate which sets forth the facts as to the place and time, for whom and of what material the boat has been constructed. These new vessels are officially measured by an assigned government officer who is skilled in that work. The owner, furthermore, must take oath on a prescribed form in affirmation of his ownership and the designated master of the craft is required to swear that he is a citizen of the United States and that the license shall not be used for any other vessel or for any other employment than that for which the document is granted. The person named as master, of course, may or may not be the owner of the craft.

To each documented yacht an official number is assigned and it must be carved or marked permanently on the main beam of the vessel in a prescribed manner. In addition, the tonnage measurement is required to be marked on the same main beam on all yachts which are required to be documented. If the vessel is not employed to carry passengers for hire, her name and home port are required to be placed upon some conspicuous part of the hull. On yachts used to carry passengers for hire, however, it is required that the name be marked on each bow and the name and home port on her stern. Before the document can be issued, an officer of the government must inspect the craft and certify that all of these markings have been made on the vessel in strict accordance with the instruc-

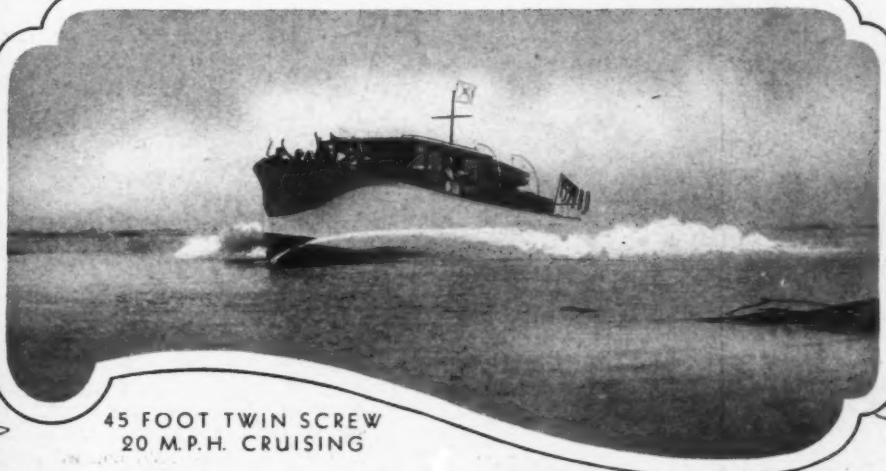
(*Continued on page* 192)

FAIRFORM FLYER

HOLDS THE WORLD'S RECORD

For Mileage Per Boat Per Season in the Hands of SATISFIED OWNERS

TO KEEP PACE WITH THE DEMAND OF FASTIDIOUS YACHTSMEN, OUR PLANT IS OPERATING ON TWO SHIFTS...18 HOURS A DAY



45 FOOT TWIN SCREW
20 M.P.H. CRUISING

IT IS ALMOST...BUT NOT QUITE TOO LATE TO OWN A FAIRFORM FLYER THIS SUMMER

IF YOU CONTEMPLATE THE PURCHASE OF A FINE YACHT OF MODERATE SIZE AND COST, WRITE FOR INFORMATION

HUCKINS YACHT CORPORATION
JACKSONVILLE, FLORIDA

NAVAL ARCHITECTS FORESEE BIG YEAR

ONCE again the new cruising season will welcome to the nation's waterways a fleet of fine yachts and motor cruisers. This year, 1930, reflecting the steady advance in the development of the boating industry, will witness the construction and launching of a greater number of pleasure craft than ever before, bringing to the lakes, bays, sounds and rivers, hundreds of new yachts, from the smaller comfortable 50-foot floating homes to the palatial 200-footer, not to mention the great numbers of small pleasure boats. Many of these bigger craft represent investments of anywhere from a half to a million or more dollars apiece. If anyone doubt the phenomenal and constant growth of yachting and the healthy condition of the industry today, he need only run through the reports of our naval architects and yacht builders, showing the new boats either on the drafting boards or on the stocks, to be definitely and quickly convinced to the contrary. Let us glance for a moment into the activities of some of our prominent designers and builders.

HENRY J. GIELOW, INC.

The activities of the Henry J. Gielow organization of New York City are typical of those found among the more prominent naval architects and marine engineers at the present time. They have now under construction and their own supervision the new Corsair, a 350-foot clipper-stem, ocean-going turbo-electric steam yacht, designed by them for J. P. Morgan. This craft will be delivered in the early spring of 1930 ready for the owner's use, and judging from its specifications will undoubtedly be one of the finest yachts of its size and type ever built in America.

Another handsome vessel is to be delivered to C. Hayward Murphy of Detroit—a 106-foot straight stem, twin-screw Cooper-Bessemer-powered steel diesel yacht, to be built by the Bath Iron Works Corporation at Bath, Maine from Gielow designs. The propelling machinery will consist of a pair of 200 h.p. Cooper-Bessemer diesel engines and the yacht will include among its auxiliary equipment a Sperry Gyro compass and Gyro pilot. She will have four staterooms in the owners quarters, large dining salon and a large living salon on deck. On a length of 106 feet, she will have a 20-foot beam and draw 6½ feet of water.

Another craft scheduled for delivery this year will be owned by Robert A. Roebling of Washington, D. C. Grenadier, as she will be christened, will be a 153-foot three-masted schooner, with a unique rig. Her beam will be 32 feet,

draft 12 feet and she will carry a 300 h.p. diesel engine as auxiliary power, and will be equipped with Sperry Gyro compass and Gyro pilot. The salient feature of this particular craft will be a special rig, which enables her to be handled with a comparatively small crew. An unusual amount of deck space will be provided. The yacht, on delivery, will be fitted out by her owner who is preparing for a cruise to Madagascar. She will be equipped with an owner's coupe type of tender, crews launch, row boat and two specially designed 26-foot twin-screw fishing boats.

A 190-footer to be christened Comoco will be delivered to Ross W. Judson of Detroit. She will be a twin-screw steel diesel yacht of the clipper stem type powered with a pair of straight eight 425 h.p. Cooper-Bessemer diesel engines, with Bessemer diesel generator, Sperry Gyro Stabilizer, metal mike, gyro compass, radio direction finder, etc. She will be 190 feet overall on a water line length of 154 with 26½-foot beam and 10-foot draft. She will have a 14 knot cruising speed and cruising radius of 6,500 nautical miles. She is built entirely of steel and will be delivered to her owner at the Bath plant in Maine on July 1.

Another craft now being built which will be delivered about the middle of May to a prominent yachtsman is a 191-foot clipper stem steel diesel yacht which will be seen frequently along the Sound this summer.

June 1 is the scheduled date of delivery of a 191-foot twin-screw steel diesel yacht to Logan G. Thompson of Cincinnati and Hamilton, Ohio. She is to replace his present 130-foot yacht Sylvia. Like the other ships she will carry a pair of straight eight Cooper-Bessemers with Bessemer diesel generators, Sperry Gyro Stabilizer, gyro compass, metal mike, Brunswick refrigeration machine, and a thermofan system for heating and ventilating the entire ship. At a speed of 14 knots she will have a cruising radius of 7,000 miles. She will be delivered to her owner in June and will sail immediately from Bath for her home port, Port Charlevoix, Michigan where Mr. Thompson uses the boat during the summer months and will be seen in Florida and West Indies waters in the winter of 1931.

The new 265-foot twin-screw steel ocean-going diesel yacht Caroline, now under construction for Eldridge R. Johnson of Camden, N. J., designed primarily for scientific expedition work, will be delivered to the owner in May 1931. This craft is at present under construction from the designs of and under the supervision of Henry J. Gielow. It is interesting to note that, of the yachts described above, Ross W. Judson and Mr. Johnson are former Gielow-designed yacht owners. Mr. Johnson is cruising at the present time on his 171-foot Caroline which was built four or five years ago.

JOHN H. WELLS, INC.

The engineering department of John H. Wells is also working to capacity. They are now working toward the completion of Nakhoda and Cambrions, sister ships of Alfred P. Sloan's diesel yacht Rene, recently completed from Wells designs in conjunction with Cox & Stevens. Nakhoda and Cambriona are 236 feet overall on a 196-foot water line. The motive power consists of two 1,100 h.p. Winton diesel engines which will provide a speed of approximately 16 knots. These vessels are being built for Fred J. Fisher and Walter O. Briggs.

Olive K. was recently designed by the same firms and delivered a short time ago to Charles F. Kettering, chief research engineer of the General Motors Corporation. This yacht has just returned to Miami after a successful cruise to the Galapagos Islands.

J. D. Zellerbach has placed an order with the Wells organization for a 124-foot twin-screw diesel yacht which is now building from their designs and under their supervision at the yards of the Defoe Boat and Motor Works. This yacht will be equipped with a pair of 350 h.p. Winton diesel motors giving it a speed of 12½ knots.

George W. Loft has placed an order with Wells for the design of a 118-foot twin-screw diesel yacht which is now building at the Defoe yards. A pair of 400 h.p. Winton diesels will supply a speed of about 17 m.p.h.

Since last October an order was also placed by L. V. Aronson for the design of an 80-foot twin-screw diesel yacht which is building at the Chance Marine Construction Company's plant at Annapolis, Maryland. She will be equipped with a pair of 150 h.p. Winton diesels.

Three Wells yachts are in the course of construction in the yards of the Consolidated Shipbuilding Corporation. Two of these are for Jeremiah Milbank and George W. Moffett, and are

(*Continued on page* 106)

Tebo Yacht Basin is a
YACHTYARD *as well as a* **SHIPYARD**

THE largest yard in the world for the repair, conversion, fitting-out, overhaul, reconditioning, redesigning of fine yachts. The complete facilities of Tebo eliminates all annoyances or delays in deliveries on contractual time. Todd is an Organization of widest experience serving the most distinguished clientele in the world. Convenient owner supervision within 15 minutes of lower Manhattan.

Ample storage (wet or dry) for all sizes of yachts and fittings.

TEBO YACHT BASIN

TODD DRY DOCK ENGINEERING & REPAIR CORPORATION

Foot of 23rd Street — *Brooklyn, New York*

TODD — NEW YORK, U.S.A.

AMERICAN MOTOR BOAT RECORDS

MILE TRIALS

(Average of 6 One Mile Runs)

Miss America VII, owned by Gar Wood, at Miami Beach, Florida, March 23, 1929. Built by Gar Wood, Packard motors. Speed 93.123 m.p.h.

GOLD CUP RACES

625 cubic inch boats

Fastest heat (30 miles) Hotsy Totsy, owned by Caleb Bragg, Greenwich, Conn., 1927. Time, 35:06:83; speed 51.261.

Fastest lap (3 miles), Imp, owned by Richard F. Hoyt, Manhasset Bay, 1926. Time, 3:22; speed, 53.58.

Total race (90 miles), Imp, owned by Richard F. Hoyt, Red Bank, N. J., 1929. Time, 1:51:33.48; speed, 48.405.

UNLIMITED HYDROPLANE

Fastest heat (30 miles), Miss America, owned by Gar Wood, Detroit, 1920. Time, 25:44; speed, 70.0.

Fastest lap (5 miles), Miss America, owned by Gar Wood, Detroit, 1920. Speed 71.4.

Total race (90 miles), Miss America, owned by Gar Wood, Detroit, 1920. Time, 1:28:07; speed, 62.0.

DETROIT SWEEPSTAKES

Fastest lap (3 miles), Packard Chris Craft II, owned by Colonel J. G. Vincent, Detroit, 1925. Speed, 58.95.

Total race (150 miles), Packard Chris Craft 11, owned by Colonel J. G. Vincent, Detroit, 1925. Time, 2:41:47.10; speed, 55.65.

BRITISH INTERNATIONAL TROPHY

UNLIMITED HYDROPLANES

Fastest heat (30 nautical miles), Miss America VIII, owned by Gar Wood. Detroit, Sept. 2, 1929. Speed, 75.287 m.p.h.

Fastest lap (5 nautical miles), Miss America VIII, owned by Gar Wood, Detroit, Sept. 2, 1929. Speed, 79.362 m.p.h

12 HOURS

Rainbow VII, owned by Harry B. Greening, Lake Rosseau, Canada, Sept. 30, 1929. Total 723.92 miles. Running time 11,27:28. Average speed, 63.17 m.p.h.

24 HOURS

Rainbow IV, owned by Harry B. Greening, Lake Rosseau, Canada, October 2-3, 1925. Total miles, 1217.88. Speed, 50.78.

1½ LITER CLASS (TRIAL RUNS)

Boat driven by Ralph Snoddy at Newport Beach, Calif. Oct. 6-7, 1929. Built by Hacker. Miller engine. Speed, 45.726 nautical m.p.h.; 52.585 statute m.p.h.

In Competition, Little Spitfire, owned by J. H. Rand, Jr., Detroit, September 3, 1927. Speed, 42.17.

151 CLASS—UNLIMITED

1-mile straightaway, Spitfire V, owned by J. H. Rand, Jr., Albany, N. Y., July 5, 1927. Speed, 62.82.

In competition, Spitfire V, owned by J. H. Rand, Jr., San Diego, Calif. December 12, 1927. Speed, 55.42.

One lap in competition, Miss California, owned by Loynes-Harris, San Diego, Calif. December 12, 1927. Speed, 59.68.

151 CLASS LIMITED

In competition, Miss California, owned by Dick Loynes, at Sarasota, Florida. March 8, 1929. Speed, 49.20 m.p.h.

Miss California, owned by Dick Loynes at Balboa, Calif., Dec. 4, 1929. Built by Dick Loynes. Miller engine. Speed, 54.729 m.p.h.

340 CLASS

Miss California, owned by Loynes-Harris, Houston, Texas. July 2, 1927. Speed, 50.99.

510 CLASS

Miss Houston IV, owned by Frank H. Robertson, Louisville, Ky. July 5, 1926. 10 miles—in competition. Speed, 51.28.

7⅛ miles, Miss Kemah, owned by Henry Falk, Houston, Texas, July 4, 1927. Speed, 53.41.

One Mile Trials—Miss Houston IV, owned by Frank H. Robertson, Louisville, Ky. July 5, 1926. Speed, 53.43.

725 CLASS

5 Miles—Helen, owned by M. J. A. Mitchell, Louisville, Ky. July 5, 1926. Speed, 61.22.

Mile straightaway, Doc's II, owned by I. R. Van Sant, Peoria, Illinois. October 11, 1925, winning King of Belgians' Trophy. Speed, 61.77.

SINGLE ENGINE HYDROPLANES

1 mile, Miss Chicago, owned by Sheldon Clark, Detroit. Sept. 3, 1921. Speed 72.86.

15 miles in competition, Fore, owned by W. D. Foreman, Cincinnati, Ohio. September 29, 1923. Speed, 64.75.

OUTBOARD RECORDS

The official Outboard Racing Rules adopted by all Associations for 1929 recognize American records made only over distances of five, six, ten and fifteen miles and mile trials made over statute and nautical miles in each of the several classifications of engines, by drivers of Divisions I and II.

It must be emphasized that records under these rules are AMERICAN records and NOT World records.

MILE TRIALS, STATUTE MILES

CLASS A, DIVISION I

Blue Streak, driven by Margaret Mullin at Balboa, Calif., Dec. 4, 1929. Built by Elsinore. Lockwood engine. Speed, 27.85 m.p.h.

CLASS A, DIVISION II

Blue Streak, driven by Chuck Hall, at Balboa, Calif., Dec. 4, 1929. Built by Elsinore. Lockwood engine. Speed, 28.4 m.p.h.

CLASS B, DIVISION I

Baby Brontosaurus, driven by Billy Lyon at Balboa, Calif., Dec. 4, 1929. Built by Crandall. Johnson engine. Speed, 43.974 m.p.h.

CLASS B, DIVISION II

Crandall Comet, driven by Chas. Holt, at Balboa, Calif., Dec. 4, 1929. Built by Crandall. Johnson engine. Speed, 43.94 m.p.h.

CLASS C, DIVISION I

Black Maria V, driven by Mildred Milde, at Newport Beach, Calif., Oct. 6-7, 1929. Built by Al Thomson. Evinrude C engine. Speed, 43.711 m.p.h.

CLASS C, DIVISION II

Black Maria V, driven by Al Thomson, at Newport Beach, Calif., Oct. 6-7, 1929. Built by Al Thomson. Evinrude C engine. Speed, 43.192 m.p.h.

CLASS D, DIVISION I

Crandall Comet, driven by Billy Lyon, at Balboa, Calif., Dec. 4, 1929. Built by Crandall. Johnson engine. Speed, 47.15 m.p.h.

CLASS D, DIVISION II

Crandall Comet, driven by H. G. Ferguson, at Balboa, Calif., Dec. 4, 1929. Built by Crandall. Johnson engine. Speed, 49.48 m.p.h.

CLASS E, DIVISION I

Fresno Flyer, driven by Dick Loynes at Balboa, Calif., Dec. 4, 1929. Built by Ashbridge. Johnson engine. Speed 33.78 m.p.h.

CLASS E, DIVISION II

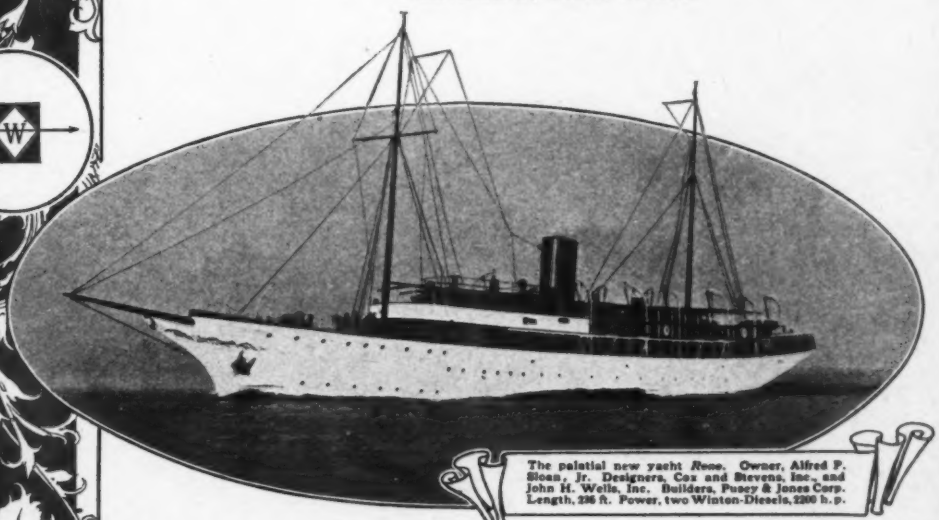
Wildcat, driven by F. E. Ludolph, at Peoria, Ill., Oct. 15, 1929. Built by Hooton. Elto Engine. Speed, 39.353 m.p.h.

(Continued on page 66)

Under Smiling Skies

OUT the fairways to the open sea, fleet, handsome craft are pointing for their spring and summer cruising. Beautiful, modern homes afloat they are, linking the brilliance of American metropolitan life with the gayety and charm of picturesque ports in all parts of the world. Smoothly, swiftly, powerfully, they slip thru the water. Their owners, captains of industry and finance, again find, under smiling skies, the placid, unforgettable days that only a modern yacht affords. Powered for dependability and sure supremacy with Winton Engines, these boats, forming the finest fleet of pleasure craft in the world, portray most effectively the confidence accorded Winton power plants by the travel connoisseur.

THE WINTON ENGINE COMPANY
CLEVELAND, OHIO, U. S. A.



The palatial new yacht *Rose*. Owner, Alfred P. Sloan, Jr. Designers, Cox and Stevens, Inc., and John H. Wells, Inc. Builders, Pusey & Jones Corp. Length, 236 ft. Power, two Winton-Diesels, 2200 h. p.

WINTON

M. Rosenfeld

CHRIS SMITH—MASTER BOAT BUILDER

Some forty years ago he said "We'll build a clean boat, and we'll build a safe boat. It will ride the way boats should—it will be the perfect boat." This maxim has been faithfully adhered to from the dozen boats of the first year to the hundreds at the present time

CHRIS SMITH
MASTER BOAT BUILDER

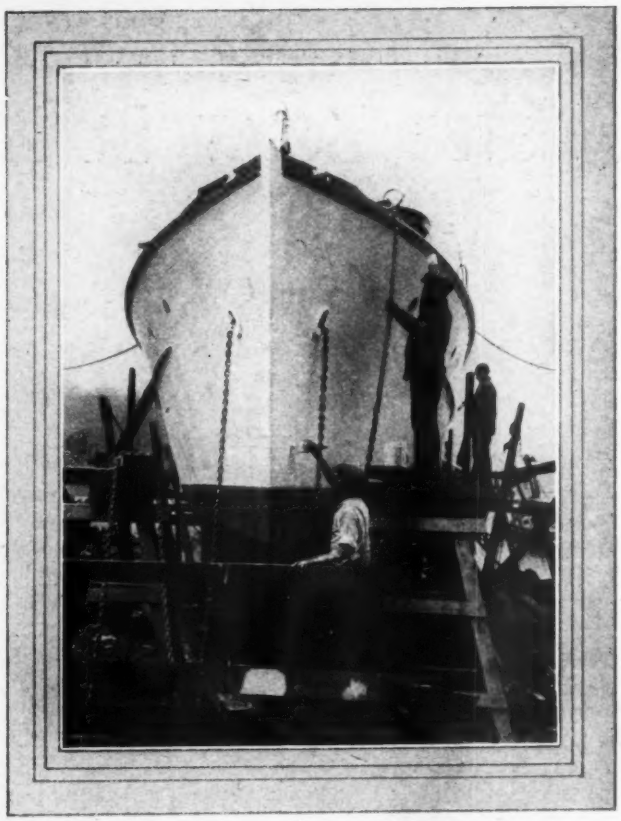
"YOU CAN'T do it, Chris, don't be a fool. You take them city fellers, they don't want the kind of a boat you can make. They want them classy jobs with brass shinin' everywhere and mahogany and all the fittin's. You can't do that stuff the way they want it. Sure, they'll pay for it, and pay good, but how they ever goin' to know you're even alive. Nobody ever heard of Algonac, Michigan, much less your boat works. You got a swell chance making a man, even as far away as Detroit ever hear of your boats. You got to use your head in things like this, Chris, you can't just say you're goin' to build boats like they coin money, and get away with it. Why, I've knowed more young fellers go bust just on account of them thinking they could startle the world, than little. You ain't no genius, Chris, I'm your friend, and I'm telling you straight, I wouldn't want to see you sink all your money you got in the world in some big boat buildin' plant, because they ain't no future in it. They jest ain't no sense in it, that's all. You jest stick to the lumber business and you'll make yourself a good living."

If he were alive today, the gentleman who uttered those prophetic words would indeed be chagrined. To be able to foretell what will go on in times to come is one of the cherished pastimes of the older generation. And yet, the wisest of us would have had difficulty in predicting this man's future. There is a spark which burns within this man, Chris Smith, which his prophet never saw.

FORTY odd years have slipped quickly by, as years will, and we see another picture. A gray haired man, with shoulders slightly bent, is looking down. He is looking down upon the earth from the side of a huge tower, his tower. He is looking down upon a plain covered with multitudinous buildings, his buildings. Men are working in these peculiar long, narrow shaped buildings, his men, 500 strong. He turns his eyes to the south and there lies the river, the river that he brought to his very door by machines. And there they go, up and down, back and forth, the boats, and they are his boats, hundreds of them, all alike. His dream of years! High, high in the air he pauses and looks over what once was his—years ago. A little plot, a little shack, a shop to work in, that was all. There it stands now, untouched by time, just as it used to be, now right in the very center of it all. His domain spread on all sides of it, the very core of his life, and now this little building is lost amid its rivals. For acres they go, this way and that, stretching out like eager fingers in all directions. But there is a plan, there is a reason for the shape of every wall, every roof, and every yard. A plan evolved by long experiment.

MANY things have happened in forty years. Nations have come and gone. kingdoms flourished and faded. Kings assassinated and wars waged. Worlds upset and turmoil everywhere. Up in the quiet little town of Algonac, things went along much the same as usual. Sons were sent off to war when the call came. Many returned to their homes again, and some stayed in France. Chris Smith was very fortunate; all his boys returned. Boys when they went away but men when they came home. Slowly, they picked up the thread of life again.

Then came the year 1922, a memorable one for the Smith family. They banded together, headed by the indomitable Chris and formally decided to build boats the way they had never been attempted before. True, they had built the world's fastest boats, the Miss Americas, for years, but this was to be different. They were going to fulfill that old dream—they were going to sell boats by the (*Continued on page* 114)



Bigger boats are painted by the skilled mechanics in the ship yards

Photographs by M. Rosenfeld

ALMOST READY FOR LAUNCHING

Finishing Touches Being Put on Thousands of Boats Whose Impatient Owners Are Awaiting a New Season of Pleasurable Boating

By F. W. HORENBURGER

IT will only be a very few weeks before the many boats now laid up for the winter will be again sailing merrily along on the rivers and sounds of our country. Those fortunate enough to spend their winters in the south have already had a taste of the new season's boating. Most of us, however, find it necessary to keep within hailing distance of the offices and shops so that we must await the arrival of a new season before our summer begins. There are countless numbers of boats of all kinds and descriptions which will shortly receive their spring overhauling to freshen, and restore them to their snowy whiteness. All of the old timers have gone through the numerous operations of getting their boat ready so often that the story is an old one to them. They are familiar with what they should do and how they should do it. The novice and beginner in boating, however, requires some instruction and it is for the particular benefit of these that this article is prepared.

Of course, there may be many more boatmen this spring who will undertake their own work of refitting their boats. The unpleasantness in Wall Street last fall, may possibly have something to do with the willingness of some to wield a paint brush in preference to signing a check. After all the easiest way to put the boat into commission is to telephone to John up at the boat yard and tell him that you want your boat ready by April 20, and then promptly forget all about the details. In this case if John functions slowly, you will find on inquiry about the 20th of April that the boat will not be ready for another week or two. The weather in the intervening time has not been quite right for varnishing and painting, but by the first of May everything will be in readiness and all that remains is to draw the fountain pen briskly across the face of a check in the proper amount.

The story for those who are compelled to do their own work either by reasons of economy, or from the pleasure they derive from it, must go about their tasks in an entirely different way. First of all it will be necessary to make an early trip to the neglected boat and inspect it thoroughly in order to determine what work requires to be done. A close inspection may reveal faulty parts which must be replaced and

Busy scenes in the spring-time when the boats begin to get into shape

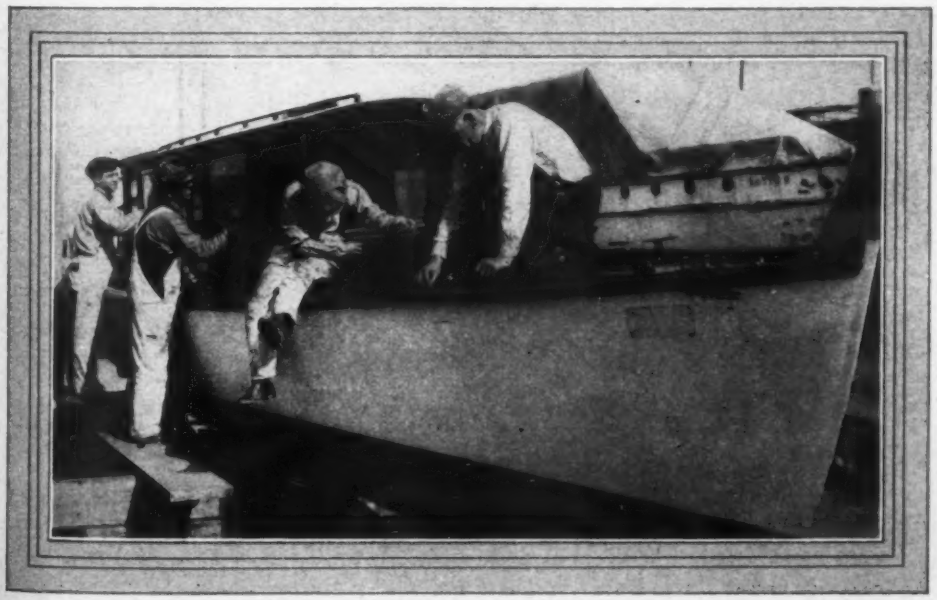
Many hands make light work applies to boat refinishing as well

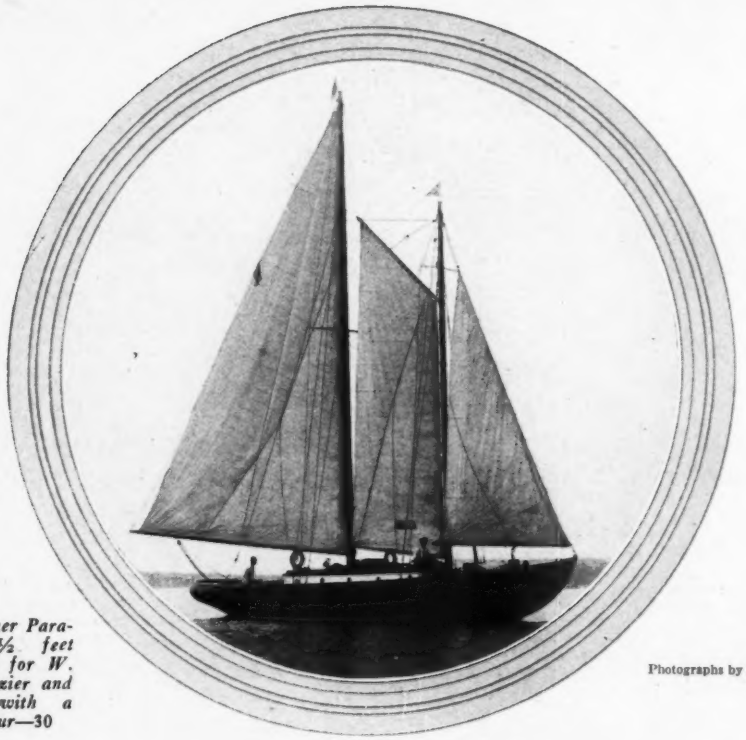
A useful power tool, an electric sander which makes short work of a hull

in order to avoid delay in the delivery of new parts, it is essential that all ordering be attended to promptly.

At the first indication of a pleasant warm week end the industrious boatman will find his way to his boat and begin the cleaning up process. The first thing will be to undo the winter cover and expose the boat to the warm sunshine which will thoroughly air and dry it out both inside and out. A liberal quantity of warm water and soap combined with the requisite amount of energy will begin the scrubbing process which can be applied with profit to all of the exterior as well as a good deal of the interior. Floor boards in the hull itself should be raised and the space beneath given a thorough scrubbing and cleaning. All of the accumulated rust and dirt which finds its way into the odd corners should be carefully removed, and after the wood work has again thoroughly dried, it may be

(*Continued on page* 120)





The schooner Paraquita, 47½ feet long, built for W. Stuart Glazier and powered with a Gray Four—30

Photographs by M. Rosenfeld

PARAQUITA A TRIM SCHOONER

Smart Little Sailing Vessel Built from Eldredge-McInnis Designs

Well Arranged and Able

SEVERAL new little schooners have recently been completed from designs by Eldredge-McInnis, Inc., which have proven very satisfactory in actual service. They have taken part in races and have performed better than larger boats. One of these, Paraquita, owned by W. Stuart Glazier, has competed in some races at Watch Hill, R. I., while a sister ship, Eastward IV, owned by Ward Robinson of Chicago, gave a creditable account of herself in a schooner race on Lake Michigan.

These boats were built by Lamb & O'Connell, of Squantum, Mass., and are 47½ feet overall length. They are somewhat shorter on the water line, while the beam is 11½ feet. They are substantially rigged, and carry 8500 pounds of outside ballast, and an additional 2000 pounds on the inside for trimming purposes. The construction of the hulls is unusually heavy. The keels and frames are entirely of oak while the planking is a single layer of rift sawn Oregon pine. The decks are laid in narrow strips of Oregon fir, which has been caulked, payed, and painted. An excellent feature of the boats is the ample amount of deck space between the cabin trunk and the rail. A commodious cockpit with seats on each side is also noteworthy. Mahogany has been used extensively for the joiner work on the deck and elsewhere.

Rigged as schooners, these boats carry a large spread of sail totalling 918 square feet. These are all of Wamsutta duck and consist of a Marconi mainsail, gaff foresail, jib, fisherman staysail and spinnaker. All sails are carried inboard, which makes the boats very easy to handle. The sails, wheel, hatches, and other small parts are all covered with khaki covers which gives a trim appearance to the boat when at moorings. The spars comprise a mainmast, main boom, foremast, foreboom, foregaff, jib, jib club and spinnaker pole. All standing rigging is of galvanized crucible steel and the blocks for the running rigging are of the Merriman pattern with roller bearing shells. The auxiliary power in these boats is a direct drive 4 cylinder Gray engine of 30 h.p. This is located in a motor compartment, access to which is obtained through a hatch on the bridge deck. This engine is powerful enough to give the boat a speed of better than 7 knots in smooth water. A single gasoline tank is placed on the port side of the engine compartment and has a capacity of about 40 gallons. All controls for the engine are carried to the steersman's position in the cockpit and all instruments and gauges are mounted on the forward end of the cockpit where they are in plain sight. The propeller is of the Thompson feathering variety with two blades, 18

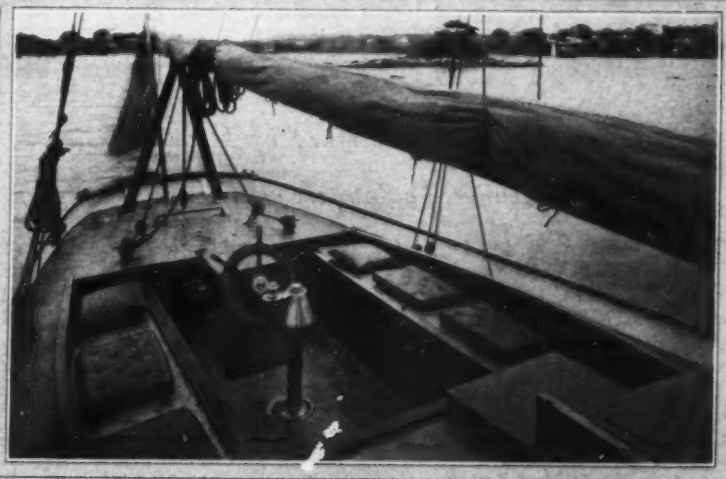
inches in diameter.

The cabin in Paraquita is unusually roomy and well arranged. It receives its light and ventilation through airports and skylights. There are four permanent spring berths and transom berths which pull out, giving a total sleeping accommodation for six persons. When the transoms are not in service for sleeping purposes they are used for seats at the mahogany folding table in the cabin.

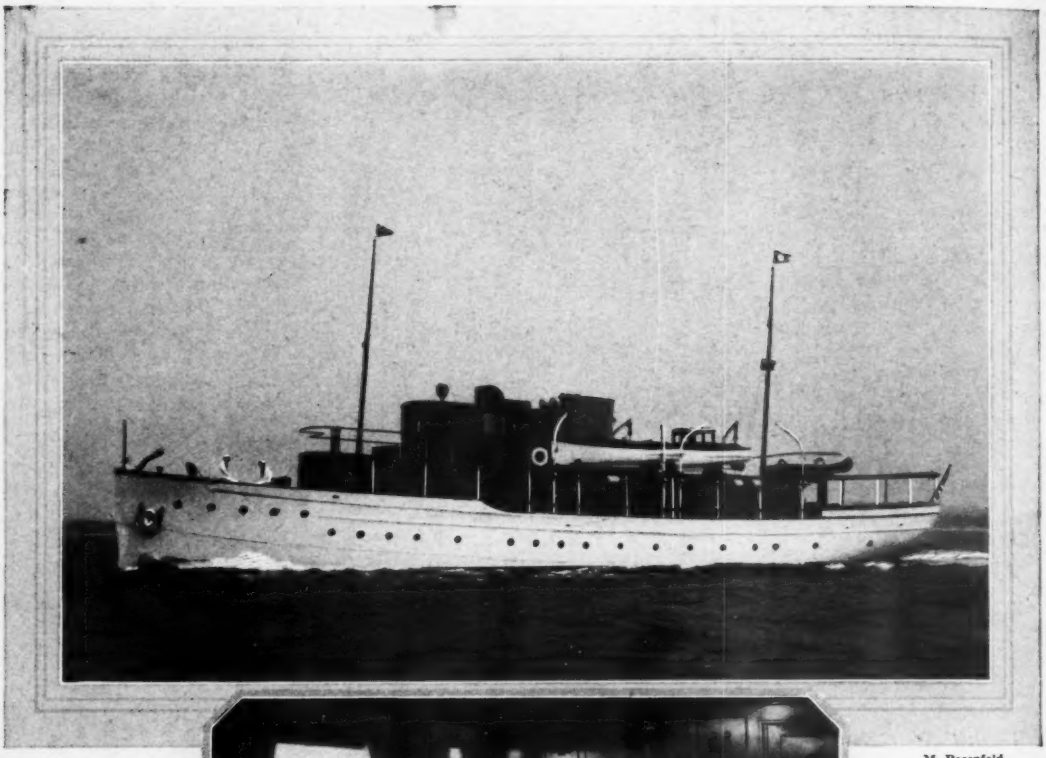
The forecastle is separated from the main cabin by a watertight bulkhead which makes it necessary to enter through a hatch on the deck. Quarters for the crew are provided there. A galley containing a range, sink, dish racks and lockers is located on the port side near the companion stairs, while on the opposite side of the cabin will be found further locker space.

The clean expanse of decks makes the handling of sails a simple matter

Interior of Paraquita's main cabin showing novel arrangement of seats and berths



Cockpit space is ample and roomy, comfortable life preserver cushions provide easy seats



M. Rosenfeld

Wanderer is a 115 foot diesel powered yacht capable of comfortable off-shore cruising

The dining saloon is simple and effective with blue and gold drapes

WANDERER, GEORGE WHITNEY'S DIESEL YACHT

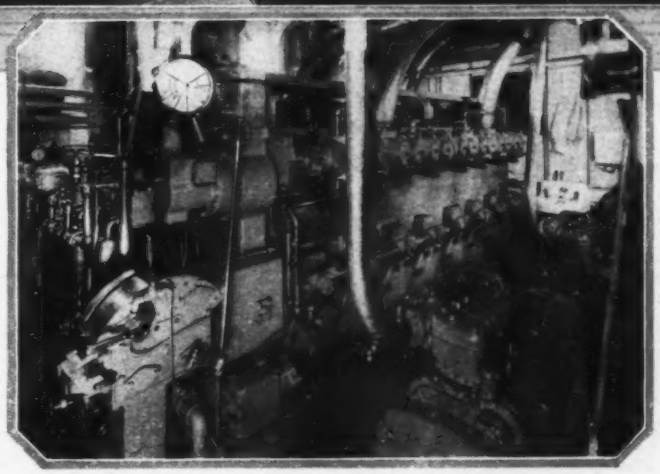
An Offshore Cruising Craft Designed by Henry J. Gielow, Inc., Which Has Rendered a Summer of Extensive Cruising

WANDERER, a 115-foot yacht built for George Whitney of New York, was launched early in the summer of 1929 and saw service with the New York Yacht Club fleet and on private cruises. The boat, designed by Henry J. Gielow, Inc. as a motor yacht capable of comfortable off-shore cruising, has a beam of 21 feet, a draft of 7 feet and is powered by two 300-horsepower Bessemer diesel engines operating on twin screws to develop a cruising speed of 14 miles per hour and a high speed of 16 miles.

In overall appearance, she is conventional in design, with a plumb bow and overhanging stern. The effect of a continuous deckhouse lends trim lines to the yacht, with little detraction through superposition of the pilot house and captain's stateroom on the upper deck.

Accommodations on the cabin deck include an unusually large living room-lounge aft. The floor is carpeted with Imperial taupe super Wilton and the draperies are plain and tailored, of seafoam and gold azure, tied back with shaped valances. A large davenport,

An unusually large living room is in the deck house aft. A large davenport and chairs provide ease



Two 300 h.p. Bessemer diesels permit Wanderer to cruise at 14 miles with a high speed of sixteen

covered with Tudor tapestry of neutral green and two chairs covered with the same material, lend the invitation of a lounge which is carried out even further in the side chairs and tables for cards.

Panelled walls, bearing a few prints, soft cushions, shelves of books, a desk with a massive silver inkwell and heavy solid-based lamps offer the combinations of a study, a living room and an atmosphere of complete home-life afloat.

The dining saloon, equally simple and effective, is carpeted also with Imperial taupe super Wilton and draperies of blue and gold Lamond cloth. The table is Duncan Phyfe and the sideboard is a long graceful Sheraton piece. The chairs are very solid, with pierced ladder backs. The seats are covered with blue and gold figured haircloth.

On the deck, aft of the living room, the shelter has been fitted with a large davenport with cushions covered in imported sunfast linen. A reed setee and reed chairs painted brown and covered with cushions of striped colored linen are grouped about a reed table and face the open end of the shelter to offer an excellent spot for lounging when the weather is inclement or the wind is cool.

In the very stern of the boat, a semi-circular hair cushion, fourteen feet long and eight feet deep, affords an unusually-large and comfortable vantage point for ideal cruising. Serviceable sofa cushions and the large cushion are covered in khaki, which, together with the heavy nautical-looking rugs offer invitation for one to lounge in the utmost comfort.

The staterooms, the captain's on the upper deck and the six below are simply but colorfully decorated. One is done in American beauty with Wilton rugs, another in green and peach, a third in turquoise and gold, a fourth in orchid and peach and the other in turquoise and orange. Decorations were executed by H. T. Lindsay Company of Boston.

Crew's accommodations consist of two officer's staterooms, one officer's messroom, an officer's bathroom, six crew's berths in the fo'castle and one crew's bath room.

Auxiliary equipment includes a refrigerating plant, a thermofan system and four small-boats, 23, 20, 18 and 15 feet in length.

TAKING DELIVERY OF ONE'S FIRST BOAT

By O. D. PFAELZER

Illustrations by WALTER BUEHR

Driving up to the gate, the attendant asked, "What Yacht, Sir?"

"YES, this boat appeals to me, but do you think that the accommodations are suitable for our family?" said the wife of a prospective boat owner.

"Well, dear, I imagine we can all fit in comfortably for the short cruises we shall take. In any case I am convinced that it is by far the best boat of its size that I have seen, and its power plant particularly impresses me," was the reply of the husband.

As is usual, this friendly raising of points in favor of and against purchase of this vacation plaything continued, with the tactful remarks, as well as encouraging—whenever possible—of the salesman.

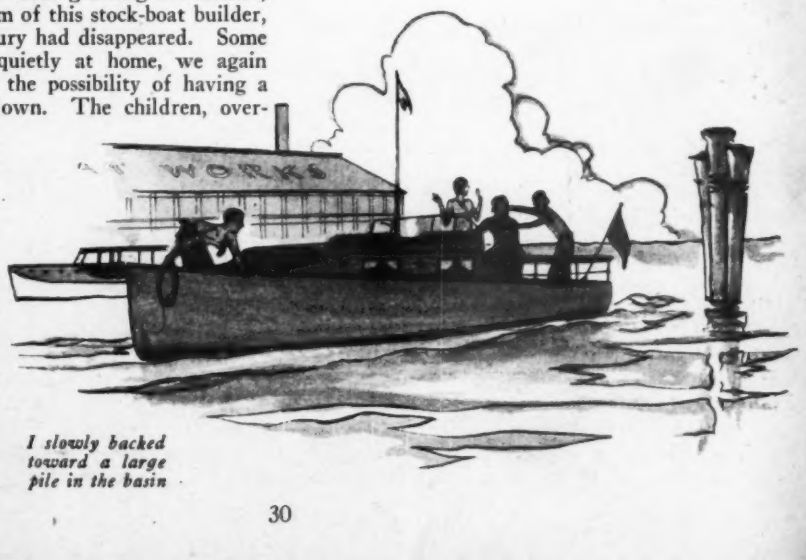
However, in spite of our ever growing enthusiasm, when we left the show-room of this stock-boat builder, the idea of buying this luxury had disappeared. Some days later, while sitting quietly at home, we again found ourselves discussing the possibility of having a small motor boat of our own. The children, overhearing our conversation, joined us with enthusiastic questioning. Where were we to keep the boat? How much work would it mean for the skipper? Would we really have time for its use? Many other questions arose, which were considered with caution and commonsense; the final decision resulting in favor of the purchase of the above referred to craft.

Anticipation! Excitement! Thrilling planning of equipment, cruises, moonlight suppers aboard, and many other fascinating ideas flooded our imaginations. We procured dimensions for the kitchen utensils, hanging of clothes, plates, blankets, pillows and so on. We shopped for the better articles at the lesser prices. In short, we were totally diverted and absorbed with the idea of being the owner of our very own yacht. What a happy time we had, and what fun it was for our children and friends to help us solve all the new questions as they appeared.

The company from which we purchased our boat was most courteous, giving us the privilege of shipping direct to their plant all our equipment, which was to be properly checked and on board when the boat was ready for delivery.

And now for the name! To let the cat out of the bag, our yacht was merely a thirty foot cruiser. The many names, at first suggested, far better suited boats of technical yacht dimensions. The idea of combining the initials of members of the family for a name, was vetoed. Names of stars or planets, although having many supporters, seemed too pompous for the small craft that would have to bear it. As often happens, during an evening's conversation, a point in the general talk suggested, Mon Ami, and from that moment on Mon Ami grew in popularity, finally being sent the manufacturer for placement on the stern of the cruiser.

Delivery, like most any purchase ordered in advance, is seldom received on the promised day. The week in which we were to have Mon Ami was filled with telephone calls from the manufacturer, telling us that due to weather conditions the varnish did not dry properly, and other plausible excuses. "Could we arrange to delay our delivery till the next Saturday?" was the final request. There was only one answer, "Yes."



I slowly backed toward a large pile in the basin

Lunch on the deck of our yacht! And what a lunch had been prepared for us

Out of justice to the manufacturer, this was the only postponement in our delivery.

Saturday, the fourth of May, was the day on which Mon Ami was to go to her owner. Only a week left. What a busy and excited man I was that entire time. Had I felt that years were creeping upon me, during those seven days, certainly I forgot them. Every spare moment was filled with the many last minute necessary requirements in owning a boat. My registration numbers were applied for and received at the Customs House in New York. Arrangements for transportation to the ship-yard for the four of us, our friends Bill and Edith, my wife Bee, and myself, as well as a driver to bring the car back, were made. Finally Saturday morning arrived, and at nine o'clock we packed the car with the articles still remaining to be taken, and by enormous effort were able to get in ourselves.

When actually started for the plant, about an hour's drive, I was so excited that all the others seemed to me like ghosts. My wife's mother having thought it most dangerous for the four of us to take Mon Ami from the ship-yard to the Englewood Basin without a pilot or captain, also wished to know when I had taken my pilot's examination, and whether or not I had passed it.? Other people thought we might get run over by the ferry-boats, or swamped by the ocean liners. Even though I had never owned a boat of my own before, I had been on sail and motor boats many times previously, and the same friends and ourselves had taken two cruises through the Rideau Canal, in Canada, without a pilot, so that I was not thinking of trying this run without some idea of boat handling. Gas-engines had also been my hobby for many years, and I had become well acquainted with them.

At ten o'clock we arrived at the yard of the manufacturer. Driving up to the gate, which was closed, an attendant appeared and asked, "What yacht, sir?" Yacht! I shall never be able to describe the thrill of that word. Mon Ami, was my reply. That was the pass-word. The gates opened. We drove in and down to the basin where the boats were awaiting their owners.

Looking down into this enormous enclosure, I spotted Mon Ami, and was overcome with a new sense of fear. My craft looked terribly small. Could I have made a mistake in buying such a tiny boat? Why even fifty-footers looked small there. I then

happened to glance into the bay, and felt suddenly less secure in my decision. I was certain of one thing at least, that it would never be safe to take the children out in that little tub, for that was what the glorious Mon Ami had shrunk to.

Suddenly I was shaken out of this thought by a very courteous fellow asking if I was the owner of Mon Ami, and whether or not I should like to begin checking out? When you are at a loss as to what to reply, you usually say "Yes." So I said "Yes." Immediately this chap led me down the runway to the float to which Mon Ami was tied. When I got there I suddenly remembered I had left the others by the car, so abruptly excusing myself, I ran back to them. I asked Bill to please unpack the car, and suggested to Edith and Bee that they would have time to gather some provisions if they so desired, as I had to check over the equipment in order to take delivery of Mon Ami I was kindly assured by all three—I think now that they felt I would have had a nervous breakdown unless they coddled me—that they would do anything I suggested and to proceed with what I was doing. I hurried back to the float. "Where do you wish to start, sir?" this chap asked upon my return. Where? How did I know? My silence brought another question. "Do you wish to start checking from the bow or stern?" I began regaining consciousness, and answered, "In the bow."

One will never fully understand, until a boat is yours, all the things that go with it, even though you buy a few hundred others. There are fenders, lifebelts, ropes, anchors, screens, curtains, stove, extra this and that, light bulbs, fuses, wrenches and so on. In the midst of all this someone ashore signalled us. I did not understand him, but the fellow with me shouted, "Yes, we had better."

"Sir, the tide is running out," he said, "and desiring to take the boat as soon as we have finished checking, we ought to move over by that fifty-footer where there is deeper water, or else we will be aground here."

Ropes were loosened, men pulled, but we did not move. Our stern was already on the mud. This we easily remedied by placing a few of the extra workmen and ourselves on the bow, then, when they tugged at the ropes, we slowly glided away from the float. A few minutes were consumed laying us alongside the fifty-footer, during which I, as skipper, looked on silently from the bow.

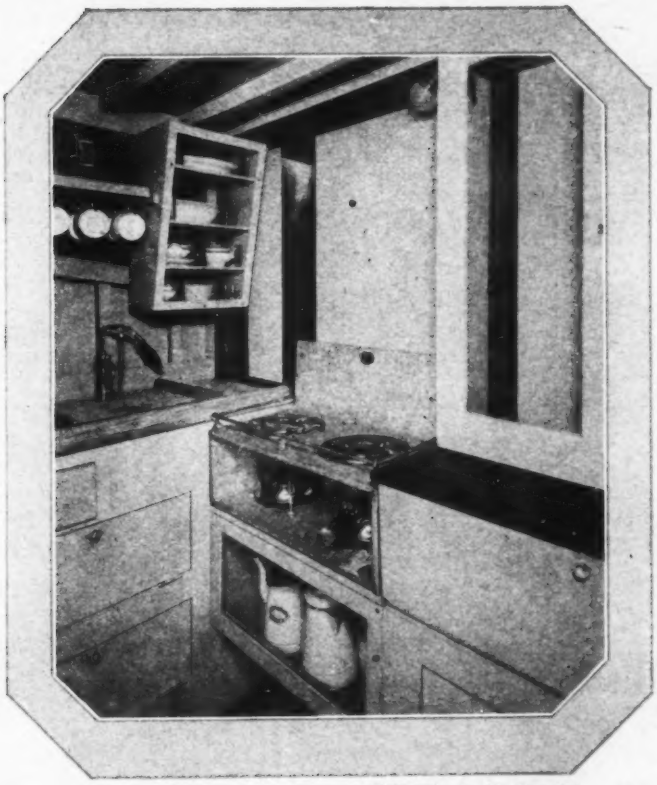
Checking now completed, the chap left me, expressing his best wishes for my success with Mon Ami. She was now mine! I spotted Bill on the dock, yelling to him, "She's ours." Something in the tone of my voice told him he was released from being a sentinel, so he climbed over the intervening boat, fell on board and said, "She IS great." Then we began unpacking the equipment consisting of plates, cups and saucers, clothes-hangers, pots, pans, plated silver-ware, towels, soap, and all the personal necessities that are needed to complete a cruiser. It was most difficult to find storage space for it all. Edith and Bee eventually appearing shouted "How about us?" Immediately we brought them aboard. What a jolly foursome we were. To be sure the ladies had also been planning. They asked us to please get out the large brown suitcase, which we did. In place of it being filled with personal equipment, when we opened it there appeared sandwiches, salad, thermos bottles, and paper napkins. Chairs were placed on deck, table erected, the ladies then setting the table with cloth, plates and utensils for five. I smiled humorously to myself to see the thrill of it all gradually growing on the others. I thought that the excitement had now gone to their heads, just as I was calming, because there were certainly only four of us, so why set places for five? Then I happened to look up on the deck and see Hank, an old friend of ours, who I recalled was with this company. "Is my lunch ready, ladies?" he cried. "Certainly," they responded.

Lunch on the deck of our Yacht! And what a lunch these two ladies had ready for us. It was all served so beautifully and in separate courses. First, one of the thermos bottles was opened, and we toasted Mon Ami, its success, and many happy cruises. Then all kind of sandwiches and hot coffee were brought on. Salad, with cheese and crackers, was served separately. French pastry was the finale. All during this there was a steady flow of talking from the entire gathering. Poor Hank had questions fired at him from all sides, about the boat, how to take the buoys, what did this mean on the chart, and so many others.

Queer, how only a few moments before this impressive boat had seemed like a small tub to me. Here we were, five of us, having a most delicious meal on deck and not in the least crowded. Forward of this deck there was a cabin, which comfortably accommodated four adults, and had also a galley, and toilet connected. Further forward was a cockpit with a broad upholstered seat. Between the cabin and after deck, a bridge deck, having seats on either side for two. Oh, yes, I was a bit hasty when I considered our yacht a tub.

(*Cont'd on page* 200)

As we left Hank stood on the dock and called final instructions



A corner of a neat galley with ample cupboard space

Photographs by M. Rosenfeld

THE GALLEY AND ITS USE

Good Foods Well Prepared Will Often Determine the Success of a Cruise.

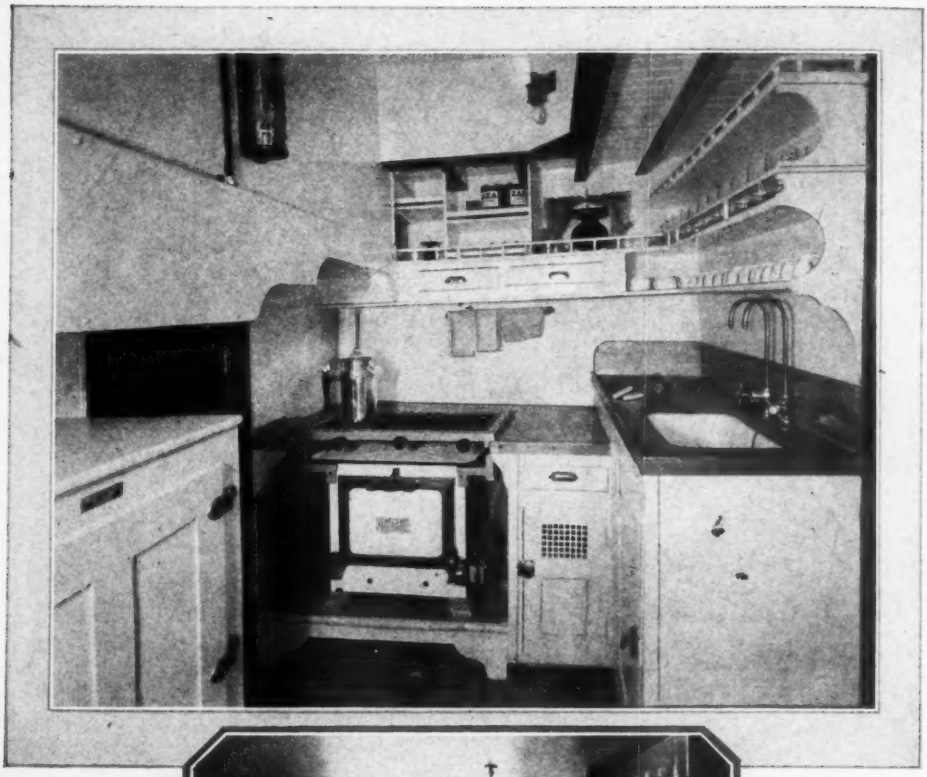
Efficient Arrangement of the Galley Simplifies the Cook's Job

By KEENE RICHARDS

CERTAINLY no experienced sailor, amateur or professional, will deny the importance of good food afloat. Nevertheless, many a cruise has been spoiled in the galley. For short runs in good weather picnic food will serve, but for a real cruise good meals are even more necessary for the health and enjoyment of the crew than when they are ashore. The diet of fried and canned food, so often served to the exclusion of all else, results in the annulment of what should be a healthful vacation, and the miserable conditions under which some cooks are asked to work can result in nothing but poor food and the generally irritable state that it produces. "A full stomach maketh a glad heart" is just as true afloat as ashore. Proper meals in all weather is a large order aboard a small vessel, but with the right equipment and supplies hot food can be served under almost any conditions. There is a very definite connection between good cooking and seasickness. Poor meals simply invite trouble. The galley and its equipment must be right, supplies must be intelligently selected, and the cook must use some skill and much judgment in preparing the meals.

The best location for the galley on most small cruisers is as nearly amidships as possible. In this location the motion will be least, and the greater beam will provide the maximum space without encroaching on the remainder of the cabin. The forepeak is the worst possible place, and the stern is nearly as bad. Meals will be served both on deck and below, and the amidships location makes it convenient to get food to either place. In addition, the cook is not cut off from the rest of the party, but may enter into the conversation when at work. The galley, or at least the major portion of it, should not be so situated that it is continually in use as a passageway. In the small boat this means that the companionway to the cabin must be at the side and not give entrance directly in the center of the cook's department.

Ventilation and lighting are of just as great importance as proper location, and they must be well provided for. Cooking in cramped quarters during hot weather or in a real seaway is a tough job and without plenty of air it is almost an impossibility. Ports and windows should be arranged to give a good draft of air through the galley under normal conditions, and



Larger boats afford greater facility. A compact grouping of refrigerator, gas stove, and sink

Another arrangement for sink and lockers with abundant space for dishes in handy racks

water-tight ventilators must be arranged to care for the ventilation when the weather makes it necessary to close everything else. If the companionway is near the stove, it will help, if protected by the awning and windshield, but too much draft nearby will cause trouble with some burners. A small electric fan, discharging through a ventilator, will give positive air circulation at all times and is the best solution of the problem. If it is possible to do so, a hood should be installed over the stove. This hood should be so arranged that it will not reflect heat into the face of the cook and should be connected with a ventilator. This ventilator must have a water-tight cowl and must discharge where the odor of cooking will not be objectionable.

Good lighting, both daylight and artificial, is essential. Location of ports and windows to secure ventilation will generally result in plenty of daylight, but some thought is needed in the placing of the lighting fixtures. It should be possible to see into the refrigerator and most of the lockers without the use of a flashlight, and plenty of illumination is required at the stove and sink. This does not mean a large number of lights; two will generally do, if properly placed. Either the bulbs should be frosted or shades should be installed in such a manner that they will not glare in the cook's eyes. Next to the skipper, he is the most important personage aboard, and we must keep him good-natured.

The size and arrangement of the cook's domain should be such that one person is able to stand in one spot, or sit on a stool, and reach most of his requirements without walking about. There will be times when walking will be difficult, and time and steps saved will result in better food. There should be sufficient space for a second person to work, especially at the sink. Two can clean up more than twice as fast as one. Unless quite liberal in size, it is a mistake to partition the galley off from the main cabin, as it is too hard to secure ventilation. Further, the heat from the stove

is often welcome in the cabin.

EQUIPMENT

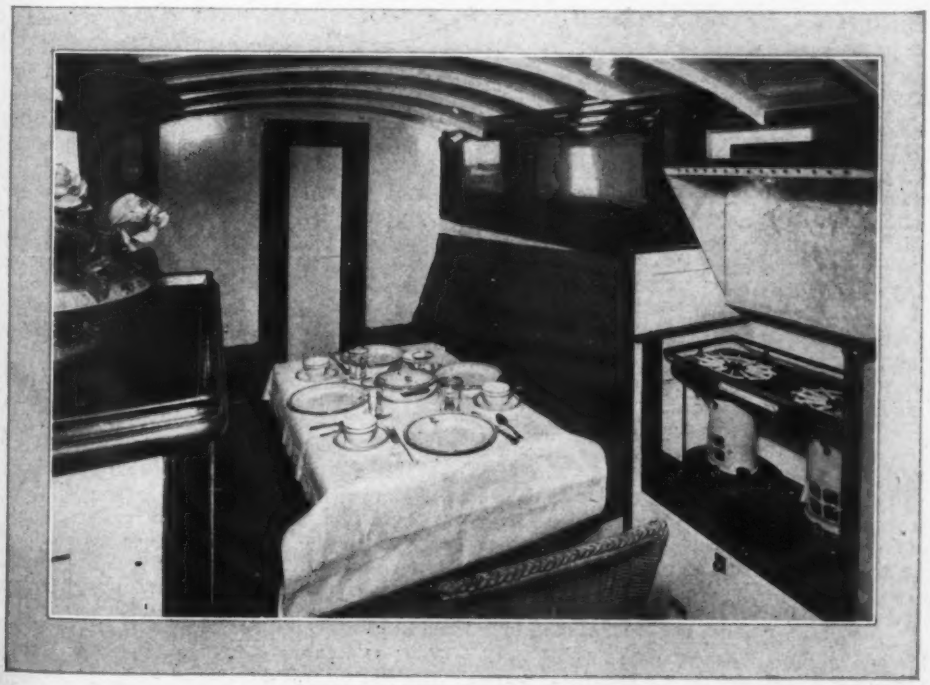
A first-class refrigerator is one of the essentials and for some obscure reason is often sadly neglected. Some of our rough and ready amateur sailors scorn such luxury and claim good meals without one. They are welcome to that kind of food. Most cruising is done for pleasure and not as an experiment in privation. I agree that many refrigerators are more trouble than they are worth, but so was a motor at one stage of the game. The ideal, of course, is mechanical refrigeration. This is generally not possible in any but the larger yachts. With the development of the absorption type, using a small flame in place of the usual motor-driven compressor, perhaps some manufacturer will awaken to the tremendous market awaiting him afloat. It would certainly be wonderful to avoid the nuisance of taking ice aboard at frequent intervals.

Sufficient space between refrigerator and stove is important to conserve ice supply

The ice compartment should be large in proportion to the food space and should drain overboard and not into the bilge. The drain line should be of lead pipe of ample capacity, equipped with a sea cock or gate valve immediately inside the planking, and with a strainer at the ice compartment. Unions should be fitted so the whole line may be taken apart, as it is only a question of time when it will become choked. The ice compartment should fill from the deck if possible. If not, it must be located near the companionway or a hatch, so that the cabin will not be in a mess every time ice is stowed.

The refrigerator must not be located at the head of a berth or any place where moisture will cause trouble. In spite of insulation, sweating will sometimes occur. Cork is the only proper insulation. It is efficient, moisture-proof and when properly installed, sanitary. Cheap substitutes are an abomination. Four inches is the thickness used in commercial refrigerators, but this amount will take up too much space in the small cruiser. About two inches of cork would seem to be the proper amount of insulation for this purpose. The extra cost of good insulation is small and will be saved in the cost of ice.

Building refrigerators is (*Continued on page* 126)



Tables set up in cabins close to galley simplify the serving problem in small boats

Madoshumi III—A Chris-craft runabout which competed in the Palm Beach regatta

Photographs by M. Rosenfeld

PALM BEACH STARTS FLORIDA SEASON

Eighth Annual Washington's Birthday Regatta at Popular Southern Resort Attracts a Representative Fleet and Entertains Thousands of Spectators

By A. McMILLAN

SPEEDY competitive times, spills and thrills were tossed out in copious measures for thousands of spectators in West Palm Beach, February 21 and 22, which witnessed the eighth annual renewal of the Washington Birthday Regatta, and start of the open season for water events in Florida.

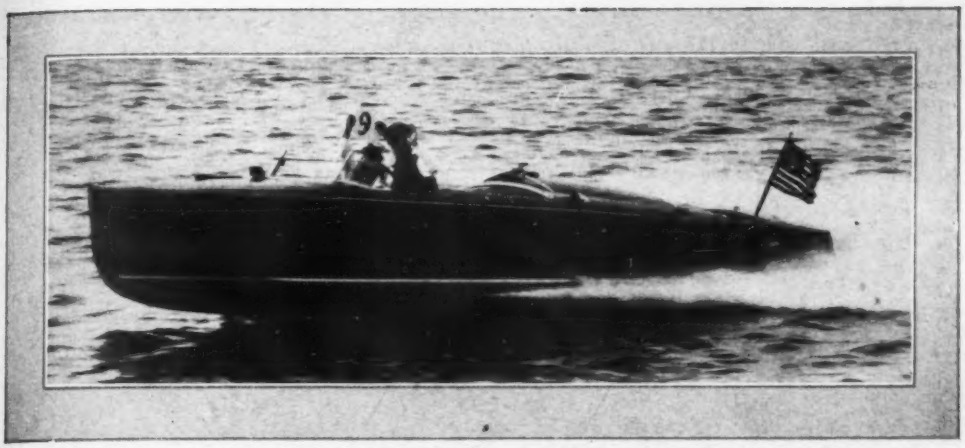
Churning up the waters of Lake Worth at an average speed of better than 50 miles an hour, Gibson Bradfield, in his Miss Buckeye, captured a leg on the new Royal Poinciana trophy in the 151 hydroplane, limited, events, and turned in the fastest time ever recorded in Florida for that class. Incidentally his average rate of speed was the best competitive time turned in for limited hydroplanes in the past three years.

While Bradfield garnered a leg on the Royal Poinciana trophy, his speedy Miss Buckeye was hardly in the running in the unlimited class the following day when Elmer Johnson, Bennington, Vt., in Sparrow, ran away with two heats, and a leg on the new Col. E. R. Bradley trophy.

Chris Ripp, Jamaica Bay, L. I., carried away second honors in both events. His Miss Meadowmere II followed Bradfield home in both heats of the limited 151 races on February 21, and Bay Head II was next in line to Johnson's Sparrow at the conclusion of both heats in the unlimited class.

The 151 class was representative and speedy. A streak of hard luck dogged the boat of Verne Squier, Jamestown, N. Y. Thunderbolt, a speedy creation, had engine trouble in the first heat, but came out strong for the second. Squier and Bradfield battled it out almost the entire two laps. Making the buoy turn just prior to crossing the finish line, Squier's boat caught fire. Bradfield crossed the line first by a wide margin, while Squier stuck to his post and with the aid of a fire extinguisher and the help of two coast guard cutters standing nearby, put out the flames. The fire, however, damaged the interior of the boat and engine, to such an extent that he was eliminated from the 151 unlimited activities the following day.

Johnson, national champion in the unlimited field, was the class of his division when the last day's events got under way. His sweet humming Sparrow swung away in the lead in both heats and was never headed. Miss Daytona and Baby Tarpon both fell down in their first tries, with engine trouble and after Bay Head II had followed Sparrow across the finish line Miss Buckeye came in third in both heats. Sparrow, capable of a speed of 65 miles an hour, was never



Adriatic, the speedy Hacker craft owned by Wooster Lambert which won the runabout even and placed second in the race for more powerful boats

extended, and the unlimited times were not so speedy.

While the 151's produced the fastest time of the regatta, the diminutive little outboards, Class B, C and D produced speed aplenty for their type and numerous thrills.

Dick Upsal, at the helm of one of J. T. Millikin's newly designed West Palm Beach Babies, built especially for rough water, turned in an average of 45.362 miles an hour in the first five-mile heat for Class D craft, the fastest outboard time ever registered in the Washington Birthday events.

Millikin's craft made great showings in both Class C and Class D events. West Palm beach Babies took second and third in the Class C event and first and third in the Class D event.

Upsal led his field to the line in both heats of the Class D affair, after an excellent exhibition of piloting. Breaking away in the lead of the first heat he gradually crept away from his field which included Malcolm Pope, famous as an outboard pilot, in his equally famous Baby Ruth to turn the two laps in 6:36.4. Millikin himself placed second in the first heat, with his No. 2 West Palm Beach Baby, but broke down just before crossing the line in the last heat and failed to finish. His 100 points, however, garnered third honors for him in the event.

B. E. Lamb, Jacksonville, in his Brunhilde, took second place in the Class C events. Brunhilde finished third in the opening heat and came in to nip Millikin as his engine died in the second heat, for a second place for a total of 150 points.

Top honors in the Class B events went to Jim Daniels, Jacksonville, in his Buckshot. Buckshot finished second to Millikin's boat in the initial heat but came back strong to grab off the last heat. Sunny Girl, B. E. Lamb's craft, took second place in the concluding heat while Millikin's boat was third.

Wilma Wynn, Jacksonville, enlivened this race by being the only feminine entrant to face the starting flag. She was aboard Wee Wink, but could not manage better than sixth place in either heat. She did, however, provide plenty of attention to the race and proved the focus point for the news cameras prior to the opening heat. Feminine-like, the compact and lipstick sprang to life from pockets of duck trousers, all grimed with engine oil, and make-up chores preceded snapshots.

Another Jacksonville entrant, F. Chestnut, in his Muriel, carried away major glory in the Class C events. All of the first three boats in this event were powered with Evinrude motors.

Millikin's two boats in the Class D event were powered with Johnson motors as was Brunhilde. Johnsons also furnished the motive works for the top boats in the Class B events for outboards.

Muriel paced the field in *(Continued on page 138)*

The 151-hydroplane class furnished the fastest racing of the regatta in both limited and unlimited classes

E. Levick, Inc.

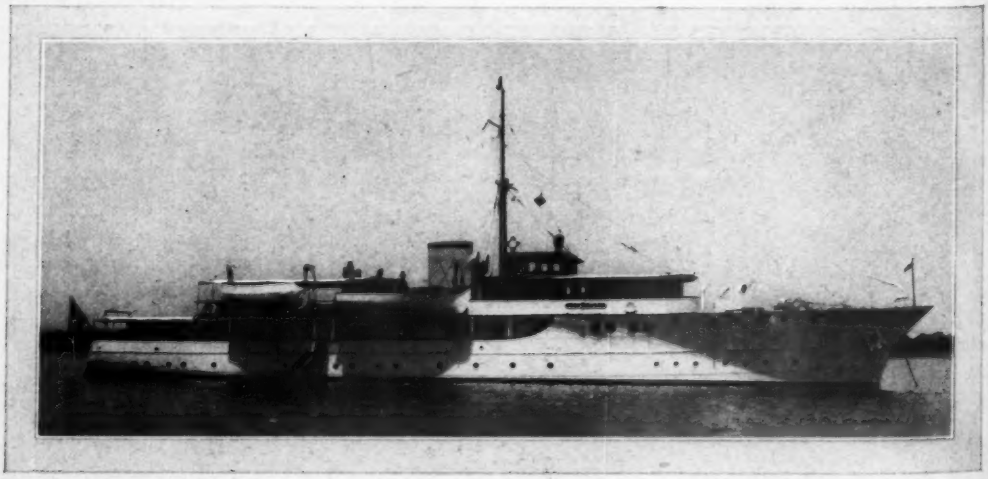
The comfortable observation room on the forward main deck of the diesel yacht Lone Star

LONE STAR—A NAVY TYPE

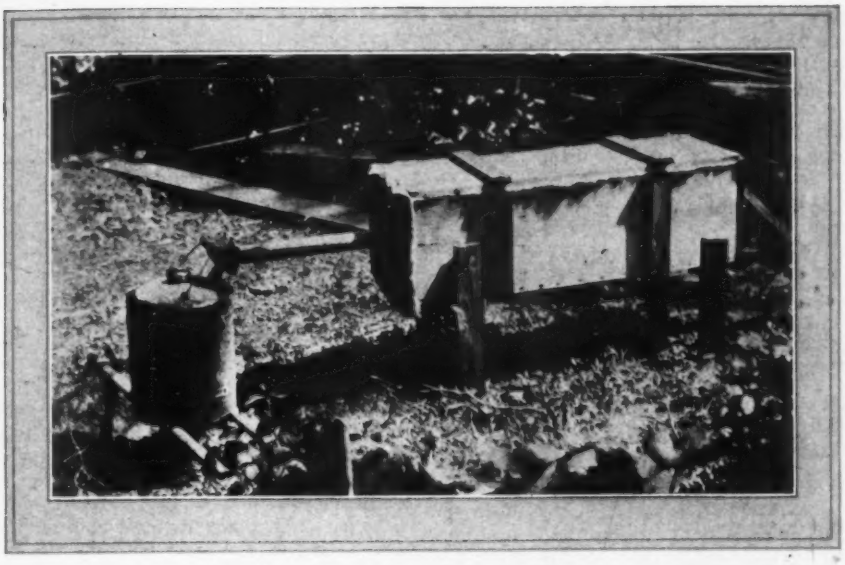
New Diesel Yacht Completed for George G. Bourne from Cox and Stevens' Designs Follows Naval Style

A NEW diesel yacht of an interesting type is the 170-foot yacht Lone Star which was built for George G. Bourne from designs by Cox & Stevens. She follows the modern cruiser type in exterior appearance and her interior arrangement is in many respects unusual. She has ample accommodations for the owner and guests divided into numerous staterooms and bathrooms. The high raised forecastle carries well aft permitting the use of the full width of the boat for the dining room. The pilot house and chart room are placed on the forecastle head, providing a delightful observation room over the dining room. The main deck house aft provides for the library and living room both of which are large and spacious and connected with the forward part of the boat by an inside passage.

The machinery equipment in Lone Star consists of a pair of diesel engines developing a total horse power of 800, which give the boat a speed of 13 knots and a cruising radius of about 7,000 miles.



Lone Star is 170 feet long and carries two 400 h.p. diesel engines which drive her at 13 knots



The simple steam box, boiler and fire place

IT TOOK PATIENCE TO BUILD TYEE

Further Work on the Steaming of Frames, Application of Planking and the Installation of a New Engine Produce a Greatly Improved Boat

By A. V. COMINGS

PART II

BENDING the frames meant, of course, that I had to have a steam box, and some way of generating steam. Here's how I outfitted for this part of the job.

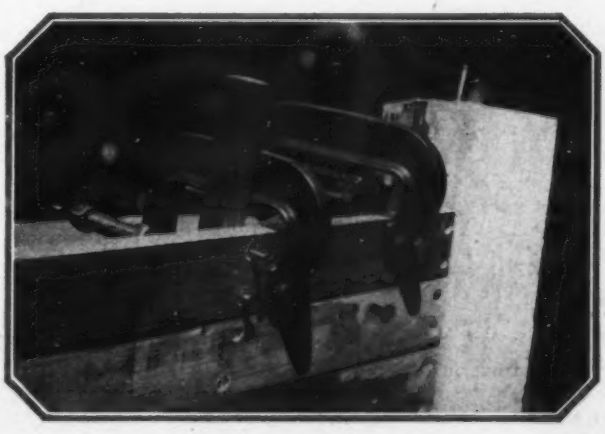
I bought an inch plank one foot wide and sixteen feet long, dressed on both sides, and cut it into four lengths of four feet each. These were nailed together edge to edge to form a box, a layer of caulking cotton being introduced at each joint before it was nailed down to make the joints steam tight. Reinforcing strips about three inches wide were nailed around the box one foot from either end.

Inside the box, about a foot from each end, three cross pieces were nailed just far enough apart that the frames could be slipped in on them from the front. Each of these racks held five frames, with plenty of space around them for the steam to circulate, so that fifteen frames could be steamed at once.

The end toward the steam generator was closed with a piece of lumber, also sealed with caulking cotton, leaving a hole three inches square in its center. With this on, I was ready for the generator.

My boiler was a five-gallon gas can, cost $1.25. As an elbow between the can spout and a length of 1¼ inch pipe, leading to the steam box, I used a pine block with a hole bored part way through it at an angle and of a size to screw snugly on the spout. From another face of the block I bored a hole to screw the pipe in, this hole meeting the other within the block. The angle they formed was such that with the boiler in place the pipe stuck out at a right angle to it. Two ¼ inch bolts through the wooden elbow kept it from splitting.

On the other end of the pipe I screwed a piece of 1 inch board six inches square, with holes for screws around its outer edge. When the boiler and steam box were in place, this piece fitted over the smaller square hole in the front end of the box, where it was screwed in place. Refer-

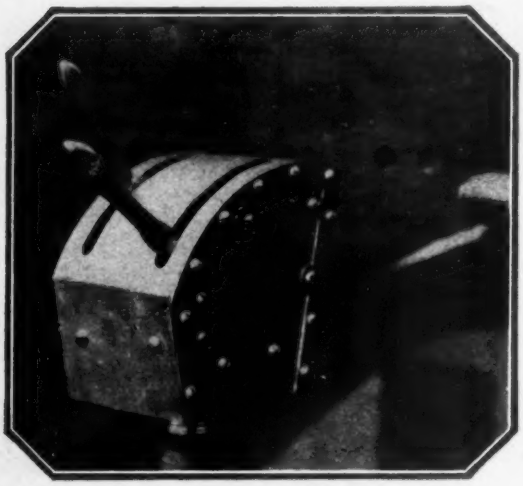


Applying a new plank to Tyee

ence to the picture will help an understanding of the job.

For the fire place I dug a hole a foot deep and slightly wider than the boiler. The side of this hole opposite the steam box was sloped upward, and faced the prevailing winds. This for better draft. Across the hole I staked in place two lengths of ¾ inch pipe and on these I set the boiler.

The outfit worked perfectly. A boiler full of cold



Engine controls with brass housing

water would steam fast in half an hour, for there was always a good breeze to fan the fire which, by the way, disposed of all the trash from tearing down the boat.

Accommodating fifteen frames at once, I never had to wait for frames to become soft when I fed them in as fast as I took them out.

While I'm on the subject of steaming, it may be well to tell how I steamed the six-foot monkey rails at a later date in a four-foot box. It was easy, just cut small holes in the door and steamed and bent one end of the rails at a time. Then stuck the other end in and bent it to shape. There was no hump where the two bendings met, as the steaming overlapped far enough in the center to prevent this.

For bending the frames I erected a high bench outdoors, near the steam box. This bench was a foot wide plank, 2 inches thick, well braced, two frame molds were nailed to this at a time, so that one frame could be cooling while I bent the next one. This speeded up work materially.

At the bottom of each mold was nailed a cleat, just the width of the frame from the mold, to hold the frame in bending. At the top this cleat was farther away, to allow a wedge to be inserted, as the bend was usually sharper there and the wedging was necessary.

I wore leather gloves in doing the bending to protect my hands from the steaming hot frames.

Ordinary frames, with the bend all in one direction, are easy to cut. Where there is a flare to be considered, there is a reverse curve, and the molds are made as follows:

The whole curve is laid out on the mold board, and cut with a heavy key-hole saw. The mold for the lower part of the curve is taken from one side of this sawed line up to the point where the reverse curve begins. From there the mold is taken from the other side of the sawed line.

In nailing down the two sections of the mold the upper part is offset from the lower just the width of the frame, as shown in the sketch, and the contour gage for that frame is used in putting the two halves in place, that the curve may be followed out accurately.

The molds for framse left of the flare were made in one piece, as they had no reverse curve to consider.

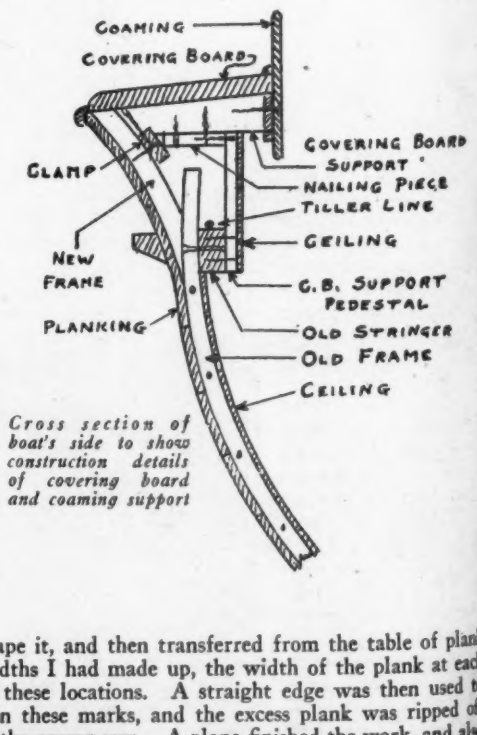
I fastened the frames in place in the boat as fast as they cooled. Fastening each in place against the old frame with C clamps, I put three screws into it from outboard, through the old planks. To be sure these screws registered perfectly in the center of the new frames, I first drilled through frame and plank from the inside, then counter bored and counter sunk the holes from the outside. Then I sank the screws home.

This held the new frames in place till all were fastened, and the new planking in place. Then the molds were removed, and the new frames were screw-fastened to the old with four 2 inch No. 10 galvanized screws. This made a solid, substantial job of the whole.

With the new frames in place I was ready to go ahead with the planking.

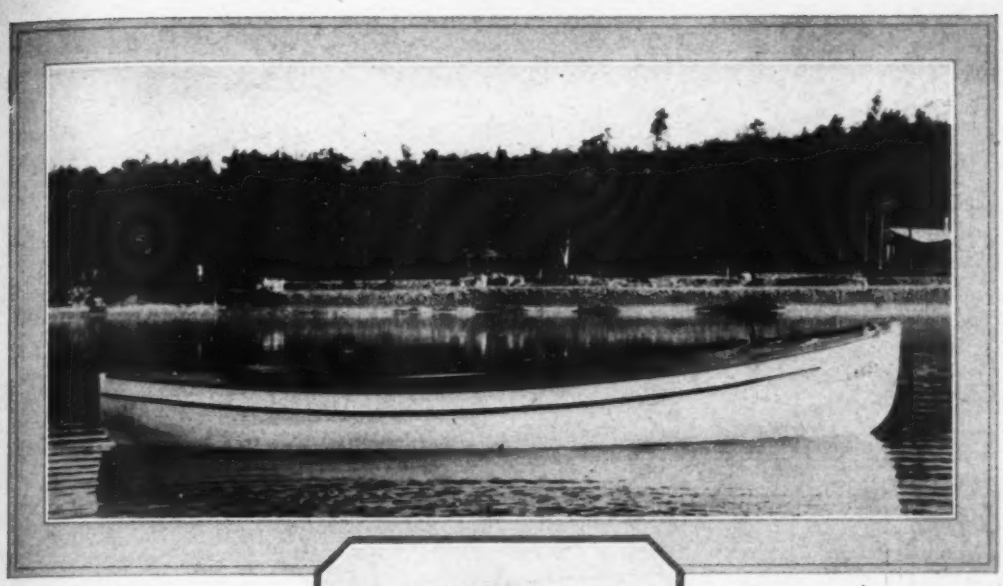
Five planks, between two and three inches wide at their widest part, were found to be sufficient. To get their correct widths at each mold I cut a one-half inch strip of galvanized iron, about fifteenth inches long. One end of this I placed against the top of the old planking at a mold, and then bent it to the curve of the mold, making a mark on it where it touched the point of the deck line above. Dividing this by five gave me the width of each plank at that mold. The same was done at each mold, and at the stem and stern. I found, by the way, that at the point of extreme flare the planks were ⅜ inch wider than at stem and stern, owing to the curve in the planking at this point.

I used a master gage from which to mark the fore and aft mold locations on each plank as I started to



Cross section of boat's side to show construction details of covering board and coaming support

shape it, and then transferred from the table of plank widths I had made up, the width of the plank at each of these locations. A straight edge was then used to join these marks, and the excess plank was ripped off in the power saw. A plane finished the work, and also beveled the plank for the caulking. Frankly, I did the



Adding six inches to Tyee's freeboard did not make her excessively high

A bridle was spliced for Tyee's mooring

beveling by eye, and gave my planks slightly more of a bevel than I should have given. Another time I would do this with a gage. It meant more work in caulking, though it did not make an inferior job in any way.

Applying the planks, something I had never done before, meant the development of a method, of which I have previously spoken, and here is the method I used.

With the plank shaped I would clamp it in place with C clamps, with the forward end at least two inches beyond the stem rabbet. I would then mark the plank to fit the vertical rabbet line, and on its upper edge to fit the rabbet bevel. Sawing it off to these lines, it would then be ready to fasten permanently.

Before fastening a plank it must be clamped firmly to the frames and wedged tightly against the plank next below. I used C clamps to accomplish the former, putting a block across the back of two frames and clamping the plank to this between the two frames, thus leaving the plank directly in front of each frame free to work on. To wedge the planks down, I clamped a block to each third frame ordinarily, with a C clamp, and then drove a wedge between this block and the top of the plank, forcing it down tight and snug. I had enough clamps to get the plank ready for fastening on five or six frames at a time.

Galvanized screws, 1¼ inch No. 9, were used in fastening the planking. Using my Black & Decker electric drill I first bored holes for the shanks of the screws along the length of the plank that was clamped and wedged down. These holes were, of course, staggered, so that the screws woud not enter the ribs in the same grain line. Next I bored smaller holes through the frames, for the screws, and lastly counter sunk the holes for the heads of the screws about 3/16 inch below the surface of the planks.

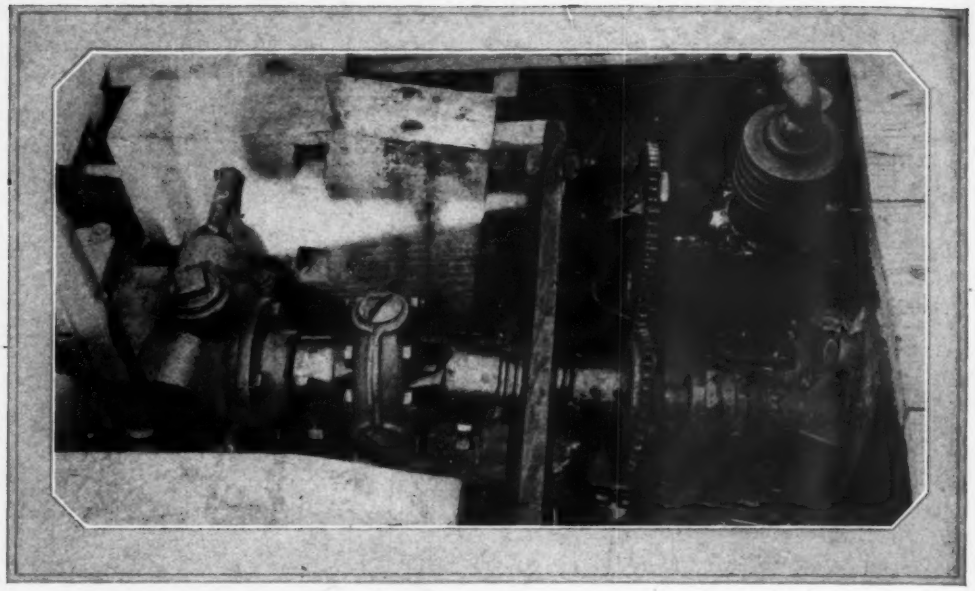
I then went along and started the screws by hand in all the holes, following up with the electric drill used as a power screw driver, and lastly set the screws up tight with a carpenter's brace with screw driver head.

Where plank ends butted together they were reinforced by the usual oak butt block, wide enough to extend above and below adjacent planks, and securely screw fastened.

The planking was really comparatively easy, and nothing to bother any amateur, with the exception of where the extreme flare came up forward. Working from the stem aft on these planks, the flare tends to throw them outward and upward, whereas in their final resting place they are in and downward. The clamping and wedging is much more difficult than on straight planking, and calls forth all the resources of the amateur. I dare say that the professional boat builder has a lot of equipment that makes this easy, and also a helper who is used to good advantage. But I found that with my scant equipment, and alone, the job was a tough one. Nevertheless, its final accomplishment brought all the more satisfaction, because of that. We all like to whip any problem that confronts us.

With the last plank in place (and I felt like throwing my hat in the air and giving a war-whoop when the last screw was driven home), I sighted carefully along the upper edge of each top plank, and with a plane dressed down two or three slight humps till the sheer line was fair and sweet on both sides. I also used a straight edge across the top planks to make sure that the bevel of the upper edges would fit the under side of the decks and covering boards. All frames had been sawed off even with the sheer line, the saw being held so that it pointed to the sheer line on the opposite side of the boat to give the tops of the sawed-off frames the proper bevel.

When I had finished this the boat really began to look like a boat, for it had no loose ends sticking out



The universal joint installation, showing adjustable thrust plate, thrust bearings and air pump

from it any more and so looked more ship-shape.

It didn't take long to tear out the molds when once the planking was done, and I then fastened in place a one-inch by two-inch yellow pine shelf or clamp 1½ inches below the tops of the frames from stem to stern on each side. These were held in place by C clamps and fastened to each frame with heavy screws, giving added reinforcement to the hull from six to ten inches above the old oak clamp.

Deck beams made from two-by-fours were then installed and I gave them about an inch crown. I never have cared for high crowned decks. These deck beams were through fastened to the yellow pine shelf with 3/16 inch galvanized bolts.

Tyee, at her home mooring, is exposed to the eight mile sweep of the prevailing wind which, at some seasons of the year, reaches a velocity of 35 to 50 miles an hour. I had never felt that the cleat on her forward deck, of a size that harmonized with her other dimensions, was really safe and I had seen some anxious moments during heavy blows when she alternately stood on her tail and plunged to her eyes.

So in rebuilding her I installed an oak mooring bitt, 3½ inches square. Now the correct practice in installing moring bitts is to extend them down to the keel, where they are well fastened, but this was impossible in Tyee, for the gasoline tank is located below the forward deck.

I found that with six inches of the bitt above deck, I could allow but nine inches below, and the installation resolved itself into a rugged bracing of the bitt so that it would withstand any strain that would be put upon it.

Reference to the picture of this bracing will show how it was accomplished. The bitt was first fastened to the after face of the second deck beam with a ⅜ inch bolt. Oak braces, 1 by 1⅛ inches, extend backward at an angle and are fastened to the third deck beam which, in turn, is braced by space blocks against two frames. Two triangular cleats brace the bitt from either side where it rests against the deck beam and a board filler braces it against forward pull to number one deck beam, which in turn is braced against two frames.

At the lower end of the bitt diagonal oak braces are placed in such a manner that all strains are transmitted to two or more frames, and all bracing is thoroughly screw-fastened so that no play may develop.

Needless to say, the bitt has stood every strain that has come to it, even in high winds, and I have never had a moment's worry as to Tyee piling up on the beach through its failure.

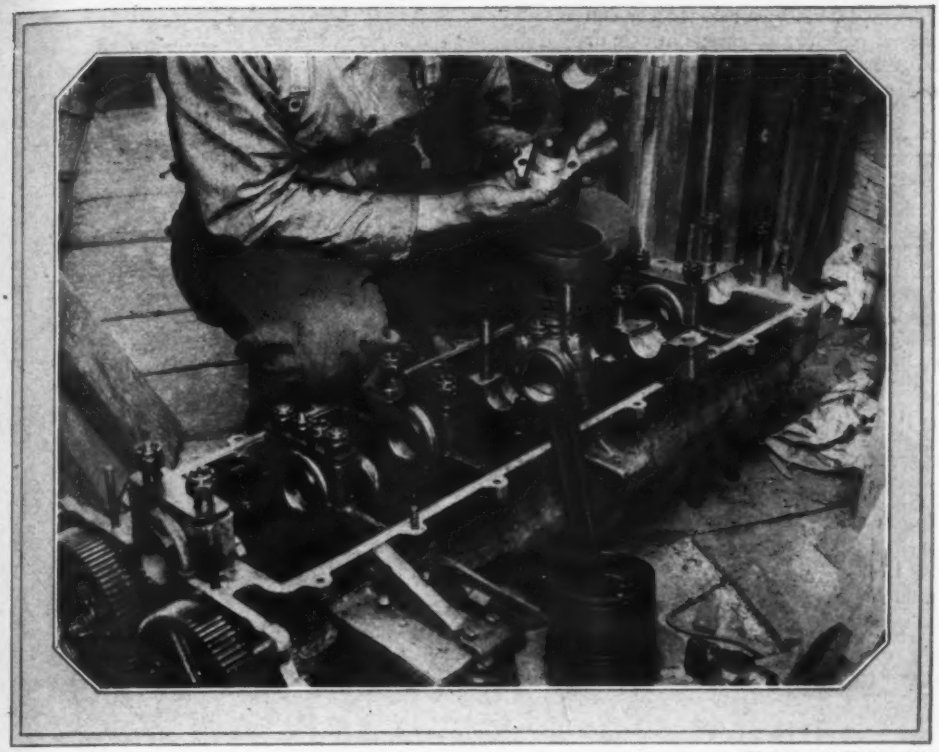
I now come to a part of the construction that was a puzzler, the supports for the covering boards, to which the coaming was also to be fastened. There are several standard methods in use in new boat construction, but none of them covered the particular problem I had to meet in rebuilding this old boat, with its old frames and its old stringer still in place.

I finally evolved the method shown in an accompanying sketch. This gave me pieces two inches wide and of varying depths to support the covering board and to which it could be nailed, with its inner end as a support for the coaming, and beneath it a strong vertical support 2 inches wide, screw-fastened to the face of the old stringer. This vertical support, in turn, furnished nailing pieces against which that part of the ceiling above the old stringer could be fastened. The outboard end of the covering board supports

(*Continued on page* 104)

Detail of spark and throttle control levers

Clip for fastening tiller lines to drum of steering wheel made of 1/16 inch brass



Photographs by M. Rosenfeld

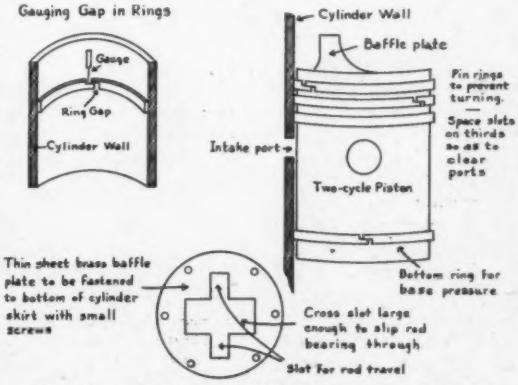
Fitting the main bearing caps is a slow and painstaking operation

GIVE THE ENGINE ITS DUE

Hard Worked Marine Equipment Calls For Attention Which Can Be Profitably Given During the Idle Layup Period and Early Spring

By V. L. STEVENTON

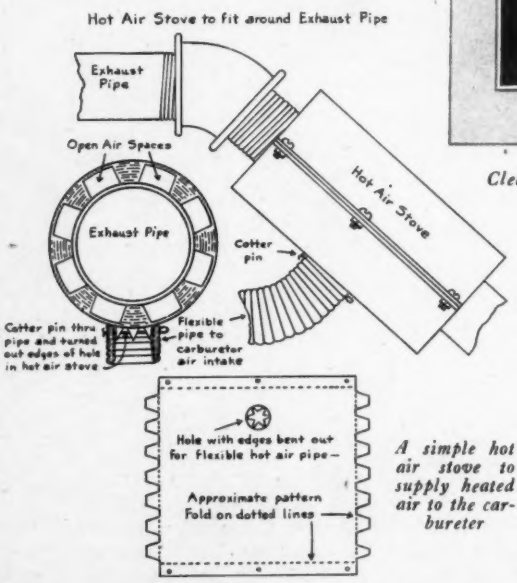
EVERY marine engine, either large or small, should receive its annual cleaning and adjusting, or overheauling, during the laying-up or spring season, to insure against mechanical troubles during the summer months. Many of the newcomers to the sport of motorboating may take issue with me for that statement, taking into consideration their experience with automobiles and paralleling the mechanical performances of both sports. However, bear in mind that the marine motor is working under full throttle on an average of 90 per cent of its operation, while the engine in the car is being run at full speed only about 10 per cent of its operation. We acknowledge that the marine motor is built more rugged in order to stand up under such operation, but the sturdiest of engines must receive periodical attention in order to give performance free from mechanical ills. The majority of engines in boats will operate on an average of 300 hours during the spring, summer and autumn seasons; others will average from 500 to 800 hours per boating season. In actual operating hours this will compare favorably with 10,000 to 15,000 miles for the engine in the average automobile, at which time either of these engines should at least have their valves ground, carbon cleaned out and any other minor adjustments or re-


Gauging Gap in Rings
Gauge
Ring Gap
Cylinder Wall
Cylinder Wall
Baffle plate
Pin rings to prevent turning.
Space slots on thirds so as to clear ports
Intake port
Two-cycle Piston
Bottom ring for base pressure
Thin sheet brass baffle plate to be fastened to bottom of cylinder skirt with small screws
Cross slot large enough to slip rod bearing through
Slot for rod travel

New rings should be carefully adjusted and the slots properly spaced

placements made. Remember, the car can be always convenient to a garage in case of failure, but the boat is more often in either dangerous or cut-of-the-way places where failure is at least very inconvenient. It would certainly be false economy to try and squeeze another season's running out of the engine without giving it attention when you consider that you have a considerable investment in your craft, and that the power plant's failure may not only lose you the value in dollars and cents, but you are also placing the lives of your shipmates, and your own, in danger. Those of us who have had several seasons of pleasure on the old craft, and intend to have many others, will not need urging, so let's get started. Here's how:

The smaller motors in open boats should be removed from the hull and the work done at home in the cellar, or in some convenient building where heat, light, water and the necessary room are obtainable. In cases of speed craft with large engines, which boats are invariably stored in buildings or under sheds, a canvas shelter can be rigged over the boat and the work done without removing the motor from the hull. The majority of cruisers, however, have sufficient room and comfort aboard so that it is preferable to do the necessary work there without removing the motor from its bed, thus saving time and unnecessary labor.


Hot Air Stove to fit around Exhaust Pipe
Exhaust Pipe
Open Air Spaces
Exhaust Pipe
Hot Air Stove
Cotter pin
Cotter pin thru pipe and turned out edges of hole in hot air stove
Flexible pipe to carburetor air intake
Hole with edges bent out for Flexible hot air pipe
Approximate pattern Fold on dotted lines

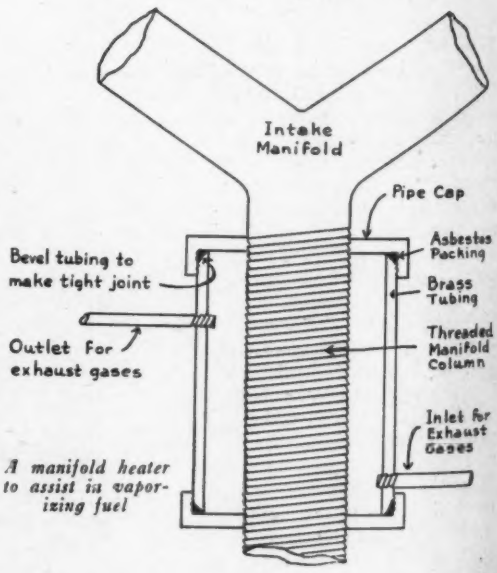
A simple hot air stove to supply heated air to the carbureter

As this article is to cover various motors, large and small, of both two and four cycle types, which will require varying amounts of adjustments, replacements or repairs, I will endeavor to outline the necessary steps in such a manner that all of your cases will be adequately described, leaving it to you to choose that portion suitable for your needs. No matter how small the amount of work to be done on the engine, do it as soon as possible, in order that any replacements may be ordered early, and the coming boating season not be delayed by the late receipt of some vital repair part.

When tearing down, be sure and tag or mark all parts as they are removed, so that they may be put back in their proper places and in the correct position; and, as each part is removed, clean it thoroughly in gasoline or kerosene and inspect as to its need of replacement or repair. It is best to use a medium size paint brush in cleaning, dipped in the gasoline or kerosene, while rags are preferable to waste for wiping dry. Waste is almost certain to leave lint sticking to rough parts of the castings, and the lint is invariably attracted to the oil pump or oil lines when the motor

Clean out the ring groove in pistons so that all traces of deposit are removed

Home-made Intake Manifold Heater



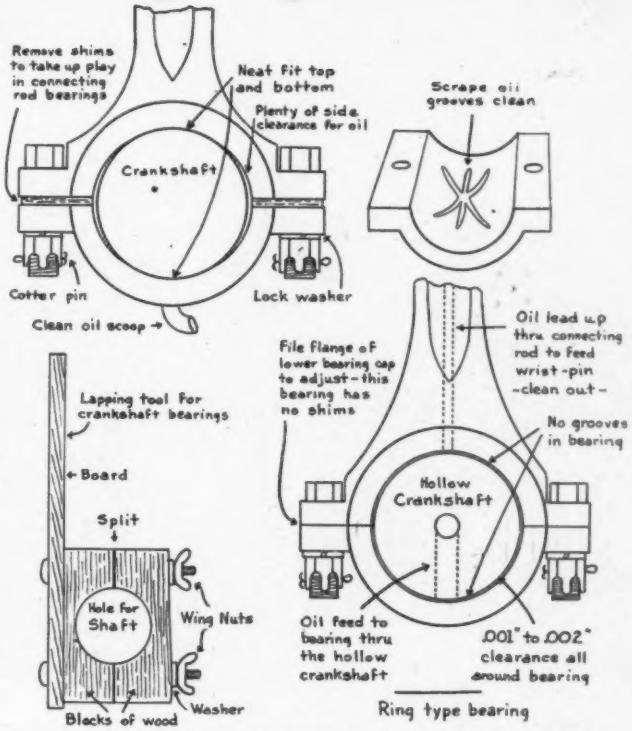
A manifold heater to assist in vaporizing fuel

is again erected and started. Unless you have a complete set of wrenches for your motor, by all means purchase one of the ratchet, socket, and open end wrench sets on the market, as they save your fingers, your time, as well as the bolt heads or nuts. When loosening tight studs, bolts or nuts, use more kerosene or rust solvent and heat, along with a little horse-sense and patience, than just main force and awkwardness; the result of which will be a few less damaged ones to replace.

Remove only such parts and equipment as are necessary to get at the parts to be adjusted, repaired or replaced.

Gears in the camshaft or ignition assemblies, which are to be removed, should be inspected for punch-marks indicating their proper positions when replacing so as to not disturb the correct timing. If not, mark them with the flywheel set at the top of the firing stroke of No. 1 cylinder. As one tooth of a gear meshes in between two teeth of its companion gear, the correct method is to punch-mark these three teeth. Punch-mark all connecting rod and bearing caps on the forward side, marking them like this . .. ., etc., the number of punch-marks representing the cylinder to which this part belongs. All valves should also be marked in order to get each back in its place and prevent the intake and exhaust valves from being transposed. Punch-mark the tops of the valve heads like this for the intakes . .. ., and for the exhaust .. .., etc.

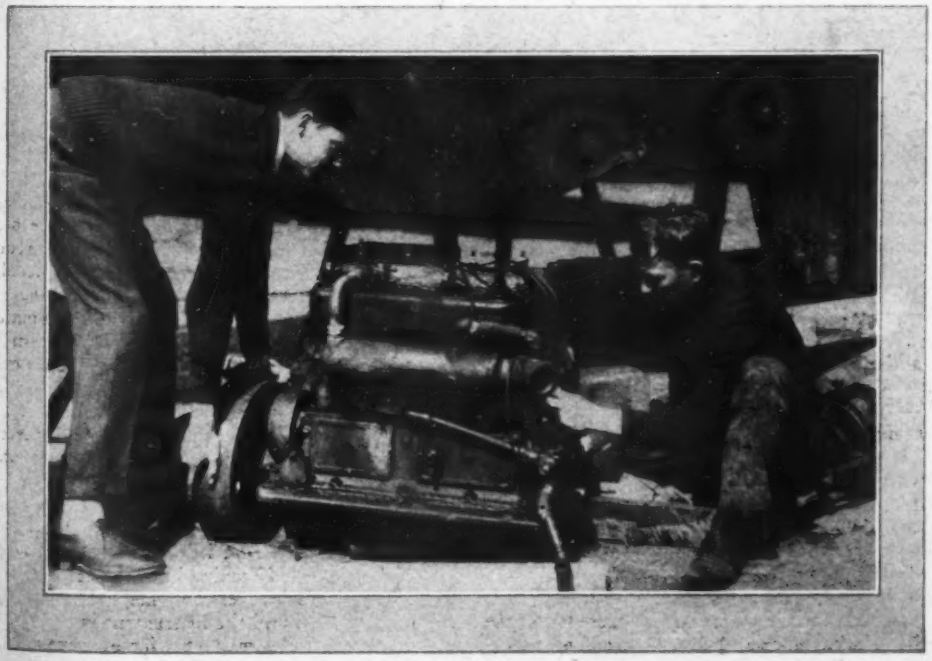
When assembling, fit all parts back to place carefully, making sure that all moving parts are snug, but do not bind. Fit new gaskets instead of using the old ones, and renew all damaged wiring. Plenty of oil should be used on moving parts when putting in place,


Remove shims to take up play in connecting rod bearings
Neat fit top and bottom
Plenty of side clearance for oil
Crankshaft
Cotter pin
Lock washer
Clean oil scoop
Scrape oil grooves clean
Oil lead up thru connecting rod to feed wrist-pin -clean out-
File flange of lower bearing cap to adjust-this bearing has no shims
No grooves in bearing
Hollow Crankshaft
Oil feed to bearing thru the hollow crankshaft
.001" to .002" clearance all around bearing
Ring type bearing
Lapping tool for crankshaft bearings
Board
Split
Hole for Shaft
Wing Nuts
Washer
Blocks of wood

Details of the method of fitting crankshaft bearings for hard service

and renew the supply in the oilers, base or oil pump.

As soon as the motor is assembled, with the exception of the accessories such as carbureter, oiler, ignition assembly, etc., clean off the outside with gasoline and give the motor a couple of coats of engine enamel. All the accessories, fittings or piping should be cleaned and polished or enameled, and when dry put in place. Check everything over and (*Continued on page 94*)



An assistant to turn the flywheel is useful when studying the timing

The compass adjuster and his assistant shoot the sun to obtain a correct magnetic bearing

THE ALASKAN FLEET ADJUST COMPASSES

Care in Adjusting and Compensating the Instruments of the Fisheries Fleet Contributes to Their Safe Navigation

By S. H. COOKE

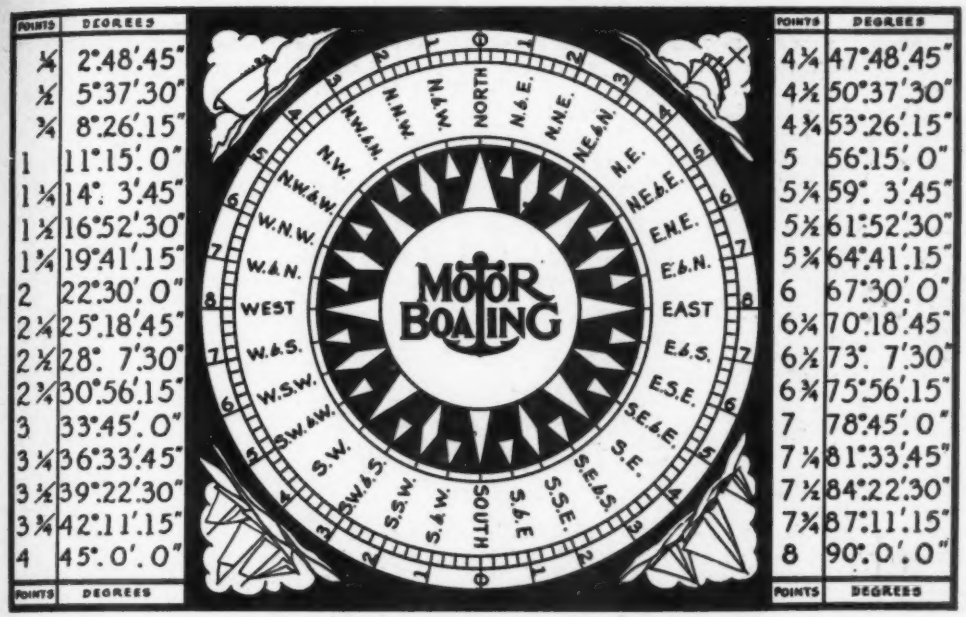
SPRING and mid-summer waterfront activity becomes the order of the day, extends from Seattle to San Francisco, embraces the outfitting headquarters of the mosquito fishing fleet about to harvest the products of the sea and not among the lesser we include salmon—the silver hoard north of 64.

After a triple launching of the last word in salmon seining craft we hustle aboard with blankets, camera and a familiar greeting to veteran skippers we have known for a decade. The compass adjuster follows at our heels—"What's the common cause of compass error, captain?"—inquires the skipper in the pilothouse of Sea Foam.

"That's like asking just how we contract a cold," drawled the expert as his assistant laid out instruments on the hatch. "We have to first understand the fundamental causes. Two cardinal principles govern; variation and deviation are two distinct factors to be considered when estimating the error of any magnetic compass. For instance, variation is caused by the earth's magnetic influence and differs according to the observer's position with reference to the North and South magnetic poles. These poles are considerably removed from the geographical poles and lie in approximately latitude 90° N, longitude 155° E respectively. At our position here (West Coast) the needle of a magnetically correct compass will be attracted about 26° to the right of true north, thus we have about 26° Easterly variation." As the speaker pointed out, the deviation is caused by local magnetism in the metallic parts of the ship itself and differs on each ship according to the details of her construction.

"Then on a new craft such as this we have to place our compass according to your test?" offered our skipper with a grin, "I usually buy a compass an' spike it down some place."

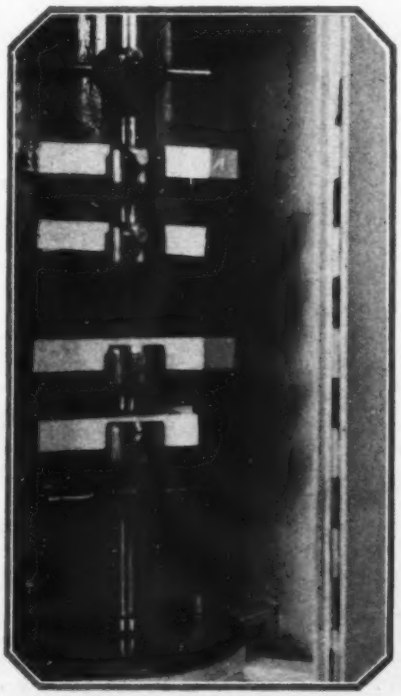
"Precisely! Usually the cheapest one obtainable," flared the adjuster. "To some folks a compass is just a card with a needle on it," as he went on to explain his procedure. "My main object is to reduce deviation to the minimum by means of magnets and other correctors placed around the instrument in order that they may counteract the magnetic forces common to your craft."



The compass card and a table of point values in terms of degrees

"Any particular advantage in having one of those standard compasses you find aboard heavier tonnage, captain?" asked the master of Sea Foam. "Any difference between correcting them an' this ordinary box compass of ours?"

"Primary advantage would be convenience of adjustment and staple accuracy of course. A mechanical difference; yes," came the ready answer of the expert. "When we swing the ship in some convenient place and by means of magnets or soft iron correctors we correct the deviations found on the cardinal (N, S, E, W) and quadrantal (NE, NW, SE, SW) points of the compass the standard instrument offers conveniences of adjustment. Open the base stand of a compass to which you refer and you will find movable magnets, the poles of which are colored red and blue for purpose of recognition of their polarity, etc. These, placed in their various slots, some fore and aft, others athwartships, counteract the effect of the two chief components of the more or less permanent magnetism to be found in the hull and steel-work of a modern ship. The adjustable vertical magnet placed under the center of a compass compensates for that part of the magnetism which operates in a vertical direction and the use of a vertical bar, termed the Flinder's Bar, generally placed forward of the compass, compensates for the transient magnetism found in the soft iron of the ship. The two black soft iron spheres situated one each side of the compass and which may be adjusted along the base slide, function to counteract the effect of transient magnetism found in continuous iron athwartships, such as beams, etc., magnetism that exerts its greatest force when the ship's head is on the quadrantal points of the compass and for this reason they are known as quadrantal correctors. A word to his assistant and the compass adjuster signifies his readiness to carry on.



Interior of a standard binnacle showing the adjusting magnets

"Let go all!" ordered the master and Sea Foam cruised midstream on a slow bell, making compass corrections as the ship's head is steadied on the principal points of the compass. As the assistant sets up the pelorus, which up to this time we had considered to be a fish with advanced nautical education, we ask an explanation of its function.

"This instrument consists of a brass tripod surmounted by a brass disk, called the dumb card," we are informed, "which is graduated similar to a mariner's compass, rotates on the base and you'll notice that I have set it up parallel with the ship's keel. The lubber line on this base indicates the direction of the ship's head. This base is fitted with sight vanes and when steadying the ship's head in a desired magnetic direction these vanes are set at the magnetic bearing of the object under observation. This card is clamped with the desired magnetic direction of the ship's head, coincident with the lubber line. Now we swing the ship, when using the sun for observation, until the shadow cast by the hair sights lies fair along the base line of the sight vanes, or, in using the sight on fixed objects of a known magnetic bearing, until they come into view in the sight vanes. The ship is then heading in the right and known direction

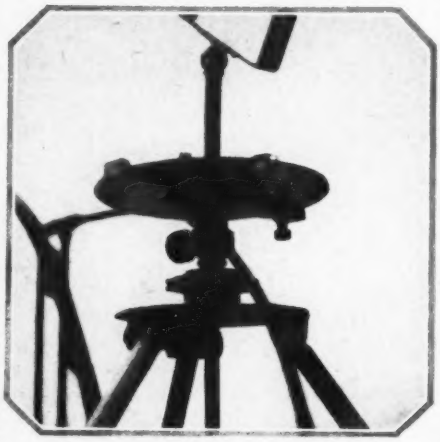
and the deviation of the compass noted for correction."

"Its functions are similar to that of the old sundial?" as we ply another question. "Can you adjust compasses at night?"

"Assuredly! Even when objects with known bearings are inobtainable, or sun obscured, the magnetic bearing of any distant object may be found by taking the mean of eight compass bearings, with the ship's head steadied on each of the cardinal and quadrantal points of the compass. Thus:

Ship's Head	Compass Bearing of Object
N	N 46 E
NE	N 25 E
E	N 24 E
SE	N 43 E
S	N 62 E
SW	N 76 E
W	N 79 E
NW	N 69 E

"Now dividing by eight (the number of bearings taken), we find the mean, which is also the correct magnetic bearing, is N 53 E," continued the speaker. "Then again, carrying out night adjustment we make use of celestial objects, such as the Pole Star or other stars and in most ports the work is greatly facilitated by making use of the leading or range lights that are to be found, one behind the other and in line, to assist in navigating narrow channels and which all have a magnetic bearing known to the compass adjuster," offered the assistant as he set up his pelorus as the adjuster ordered the skipper to maneuver Sea Foam until the shadow came into line in the sight vanes as he also made use of a landmark which happens to be a N 85 W magnetic bearing.



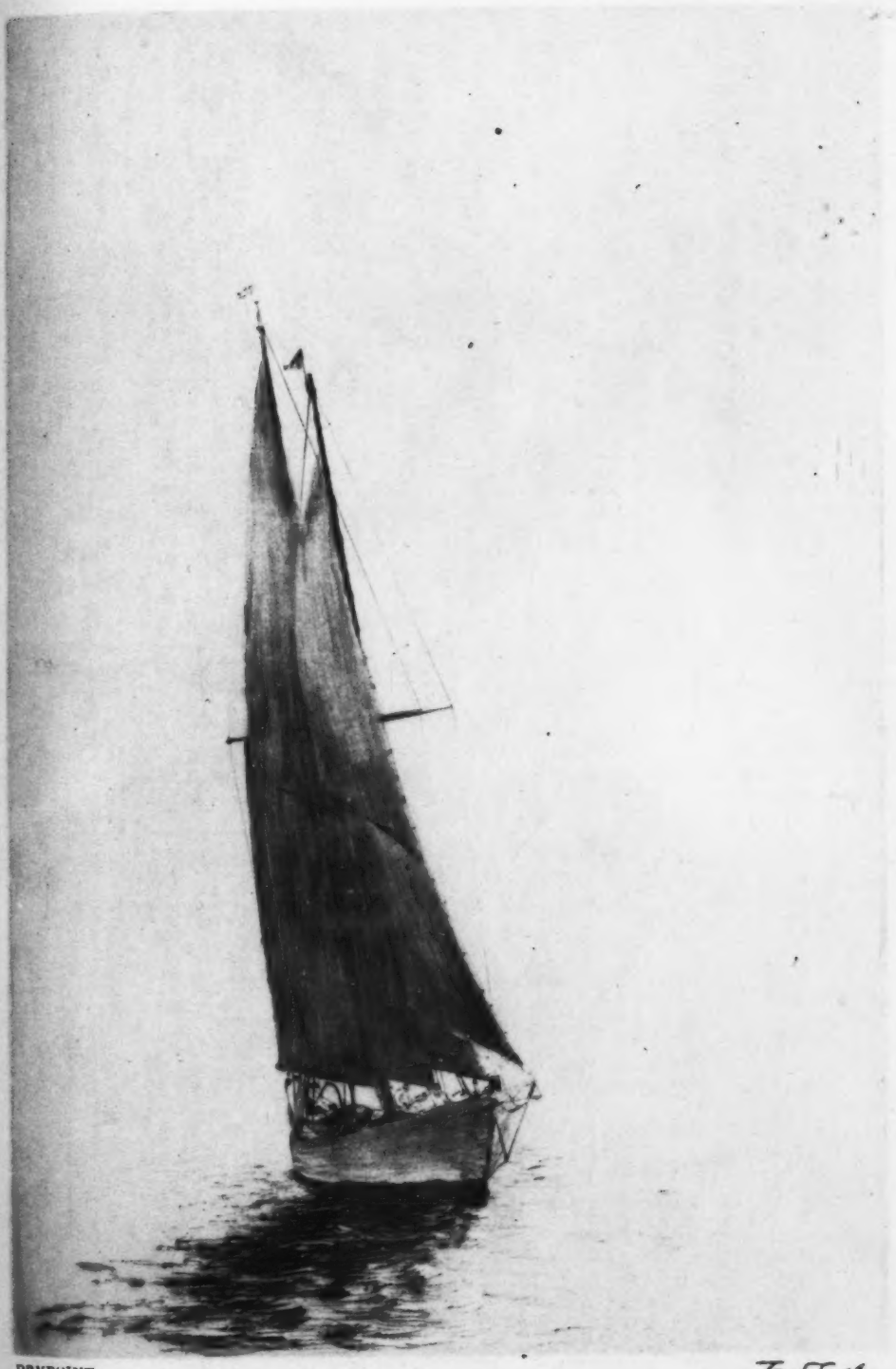
A pelorus to obtain precise bearings

Our craft boasts of an ordinary box compass with the bowl encased and slung in gimbals which allow it to retain an upright position when the boat pitches and rolls. The center of the card rests on a fine pivot and the bowl, with water-tight glass cover, is filled with spirits that partly float the card, thus eliminating the friction at the pivot, also has a steadying effect on the card and prevents any wild swinging due to vibration or motion of the vessel under way. The condition of the sun is exceedingly favorable for the use of the pelorus; nothing but woe to the photographer as we seek to avoid the glare in the lens and our rustic comment brings out the fact that the assistant on the bridge is making use of a watch set to sun time.

"Well, you see, at this time and in this location the sun differs from 26 minutes behind, to 4 minutes ahead of Standard Time," came the startling information. "I take the sun's true bearing from this book of tables in which they are given for every few minutes of time and then I make allowance for the local 26° E variation before setting the pelorus. The results, together with the adjustments made on the principal compass point errors, are entered into this record, from whence will be compiled the Deviation Card for the master's guidance." As the work of checking these points now proceeds as the adjuster speaks the bridge with monotone repetition, "How is she now?" comes from the pilot-house.

"Starboard a shade," replies the assistant. "Steady! Right! ON!" The last word signifies that the vessel is on a specific correct bearing (*Continued on page* 142)

Setting a pelorus to the ship's course



DRYPOINT

A. E. PIERCE'S QUICKSILVER II

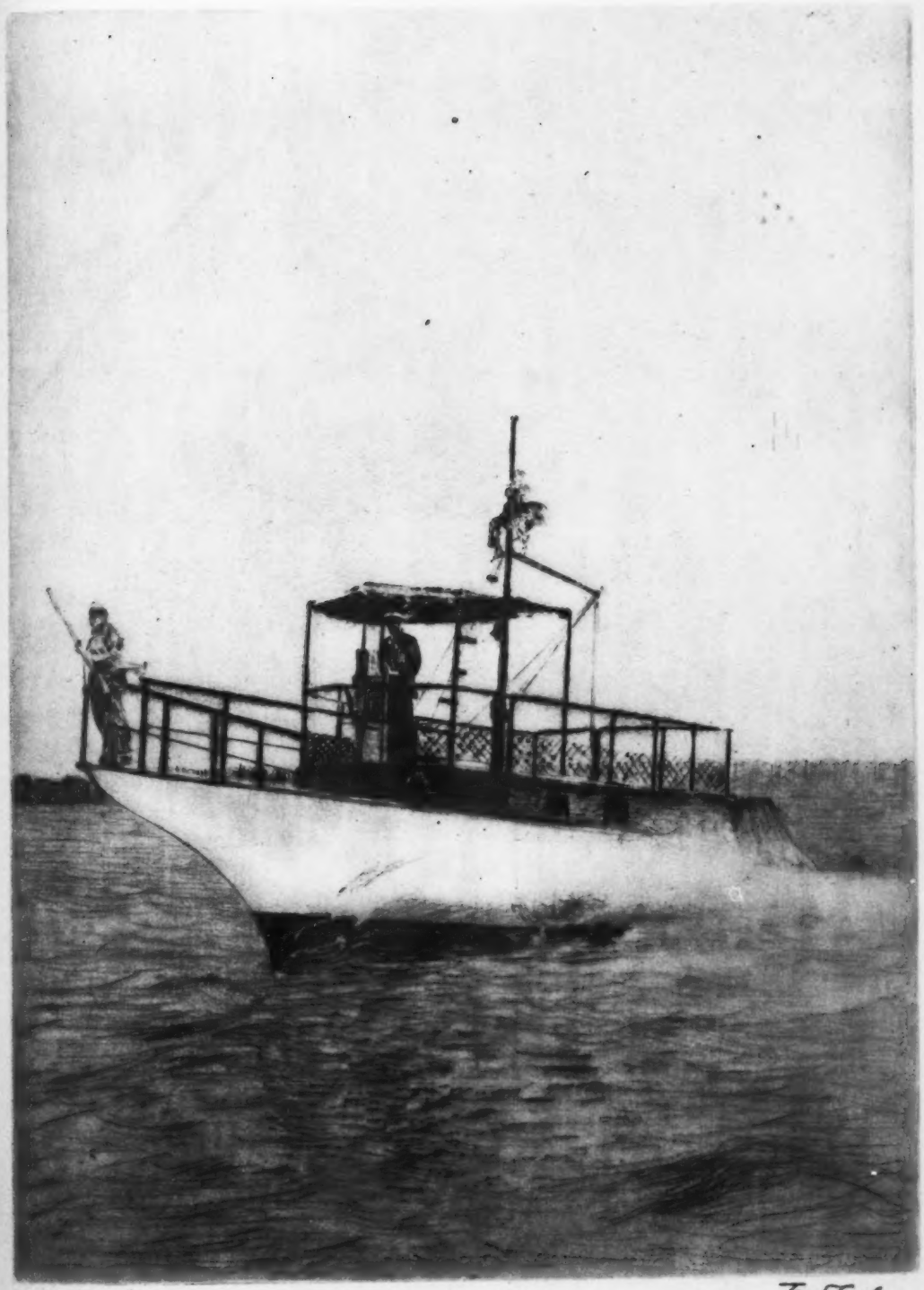
DRYPOINT

Tom Fulton

CASTING

In Beaver Dam Creek

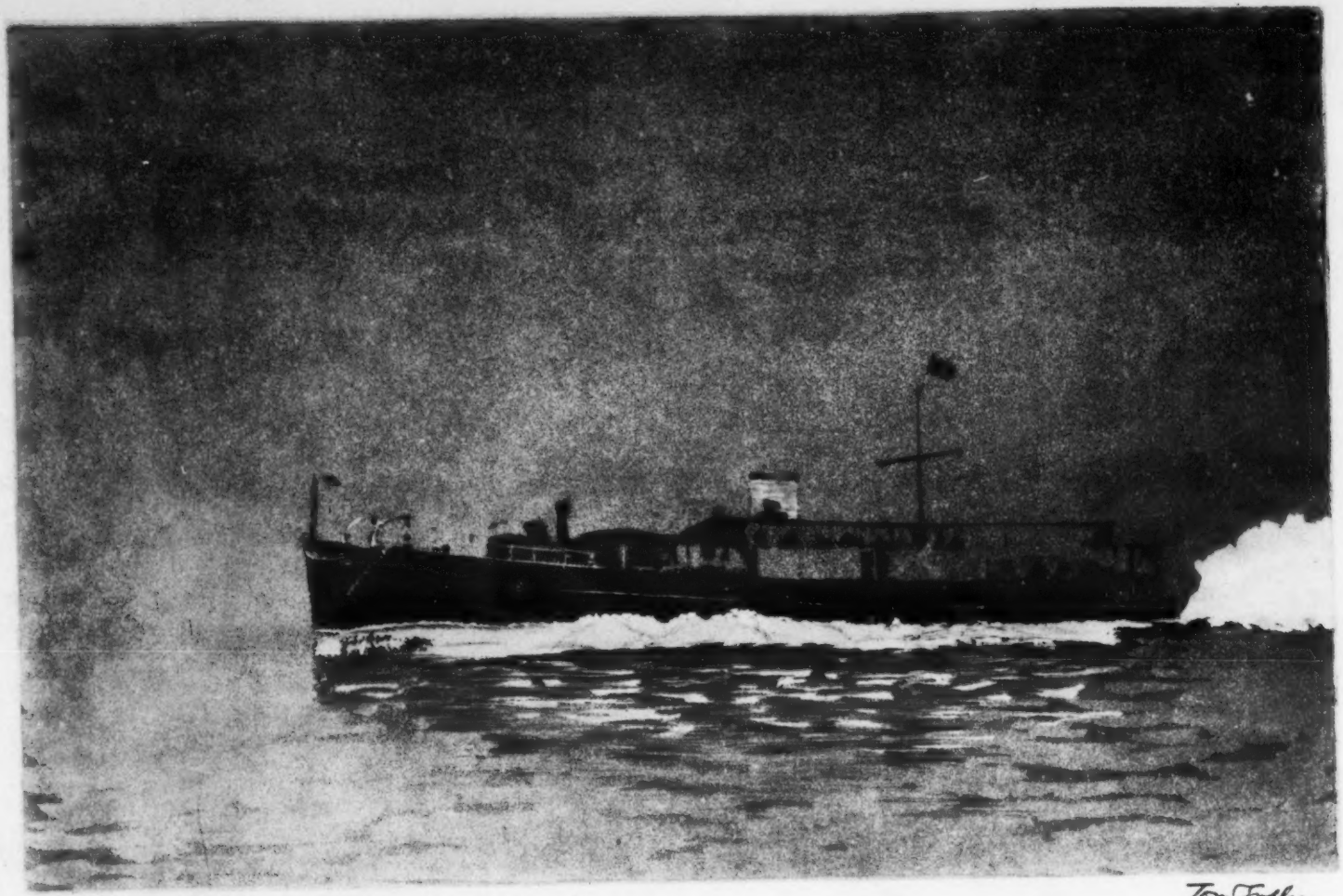
CASTING
In Beaver Dam Creek



DRYPOINT

YO HO HO II

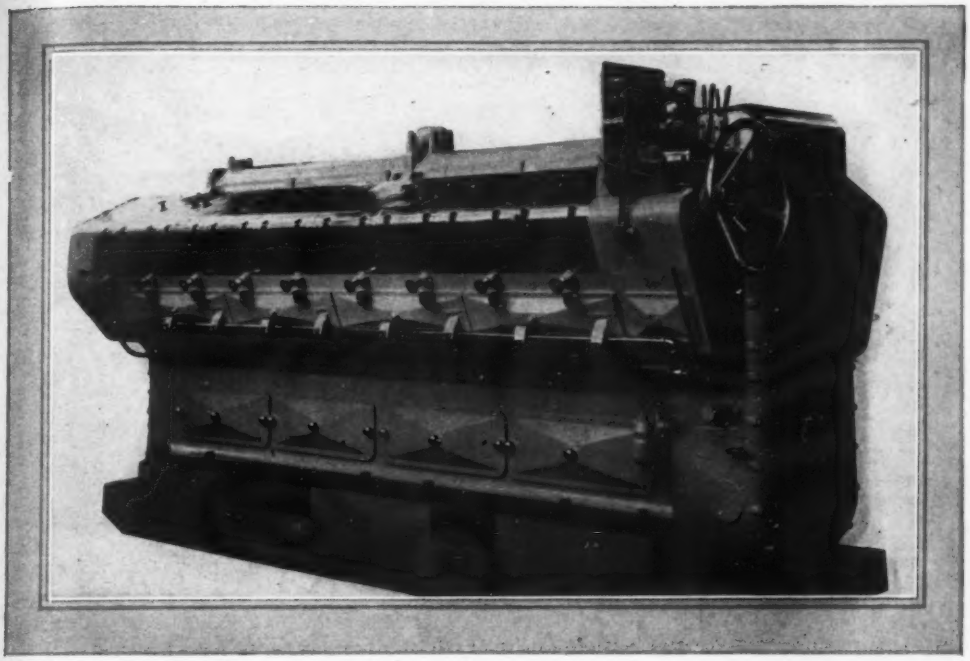
A Montauk Sport Fishing Boat
Built by Consolidated



AQUATINT

COMMODORE ROBERT LAW'S ROBADOR

Built by Luders, Winton Powered



The big 650 h.p. Winton Diesel is fully enclosed, yet extremely accessible for adjustment through removable cover

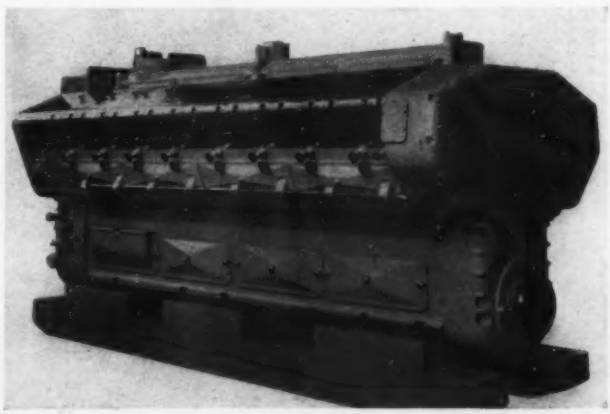
A HIGHLY DEVELOPED MARINE DIESEL

The Winton Engine Company Introduces a Sixteen-Cylinder Vee-Type Unit Capable of Producing 650 H.P.

LOOKING at the Winton sixteen-cylinder V-type Diesel at the recent National Motor Boat Show in New York, one might have paused to ponder on the progress made in the Diesel engine industry in the past fifteen years. It is just fifteen years ago that the Winton Engine Company developed and produced the first V-type diesel marine engines ever built. At that period an engine of this type was so far in advance of its time that the trade was not ready for it. However, buyers of marine engines have gone a long way, too, in their demands in the intervening years, and undoubtedly there is a trend today toward diesel engines of the V-type.

The engine displayed at New York is a remarkable power plant, and was an outstanding marine engine at the Show from the standpoint of both appearance and advanced design. Its compactness and general excellence in performance are bound to bring this engine into popular favor. It is an airless injection, fully enclosed unit, completely new in design, with attached fuel pump, fuel oil service pump, water pump, and lubricating oil pump.

Overall length of the new engine is 16 feet, 4⅝ inches; overall width at top, 5 feet 3 inches; overall width at bottom, 3 feet; height, 5 feet 10½ inches; distance from center line of crankshaft to bottom of base, 1 foot 3½ inches. The engine has a cylinder bore of 8 inches, stroke 10 inches, and develops 650 h.p. at 750 r.p.m. The weight is 18,500 pounds.



Port side of the engine from aft, showing the characteristic clean-cut Winton design

Mechanical specifications of the new engine are as follows:

The cylinder block is made of chrome nickel iron cast in one piece with tie ribs across the cylinder banks securely bolted at both sides and center to the crankcase. Sixteen chrome nickel iron liners are inserted into this casting. The cylinder

(*Continued on page* 148)

A fleet of Robinson Seagulls on the St. Joe River going to Lake Michigan for trials

A PROGRESSIVE BOAT PLANT

The Continued Growth of the Boat Industry Calls for Repeated Enlargements to the Plant of the Robinson Marine Construction Company

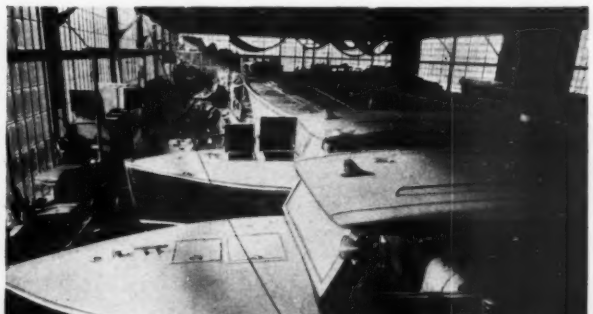
IT is interesting to note the remarkable changes that are today being effected in the boat building industry. All over the country we see evidence of the bettered condition of this fast growing and important business. On every hand is revealed a thoroughly business-like efficient growth caused by the greatest of all industrial influences—competition.

The up-to-date plant of the Robinson Marine Construction Company at Benton Harbor affords an excellent example of the new order of things creeping into the ancient, time-honored calling of boat building.

Under the guidance of Glen E. Robinson, a comparatively young man as years go but one thoroughly versed in all phases of boat building and organization work, the company which bears his name has made phenomenal strides in its bid for prominence in the marine field.

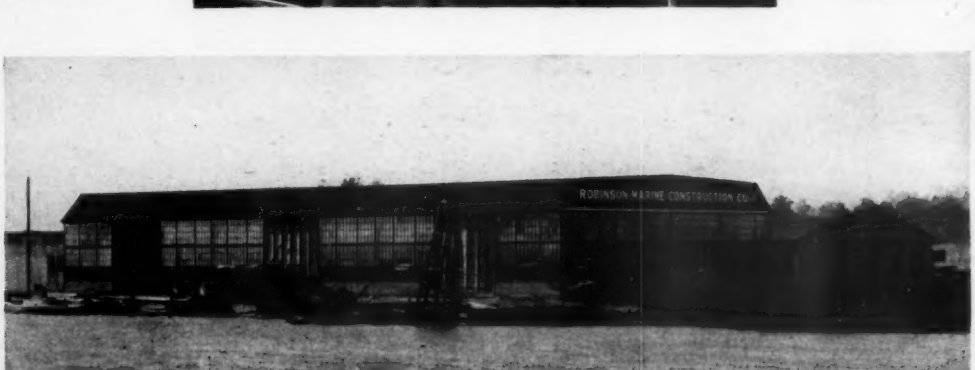
Keenly alive to the trends which were popularizing boating generally, Glen Robin-

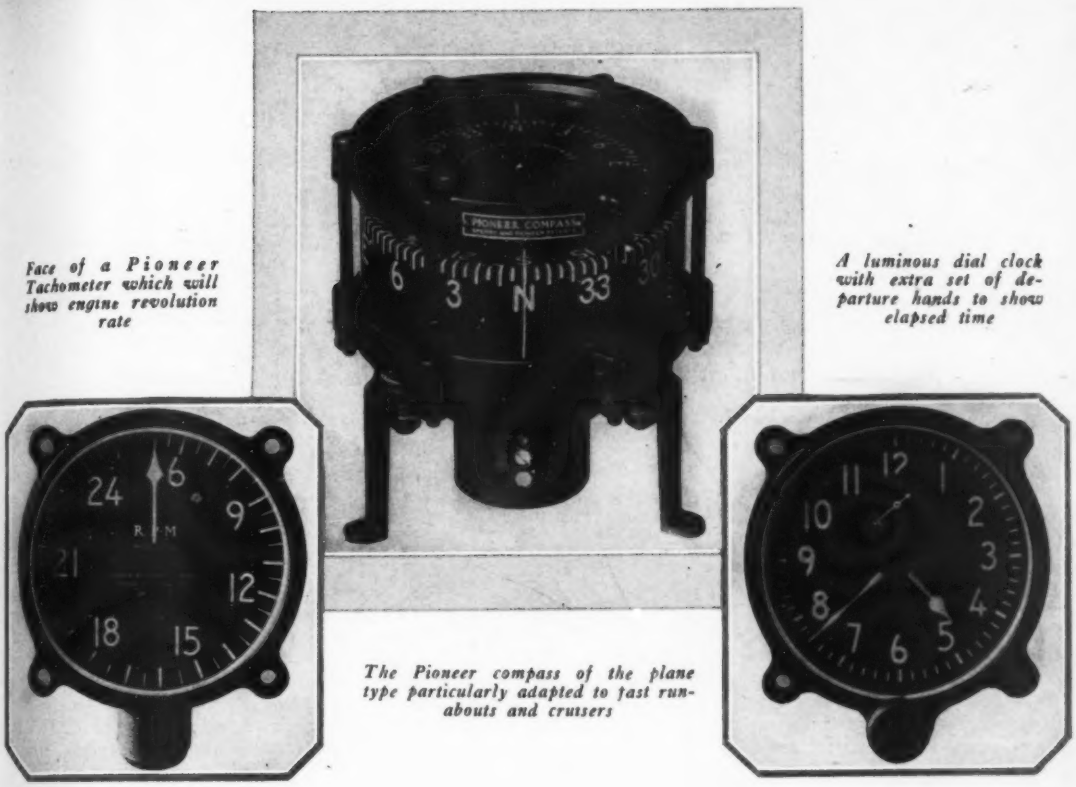
(*Continued on page 176*)



One unit of the Robinson plant which has a capacity for twenty-four boats

One of the main units as seen from the river. Boats can be conveniently launched





Face of a Pioneer Tachometer which will show engine revolution rate

A luminous dial clock with extra set of departure hands to show elapsed time

The Pioneer compass of the plane type particularly adapted to fast runabouts and cruisers

USE YOUR INSTRUMENTS

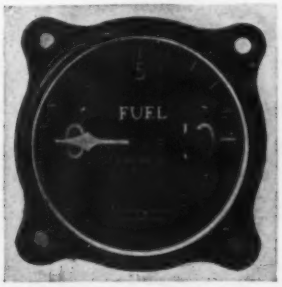
A Knowledge of the Purpose and Action of the Dash Board Fittings Will Help to a Greater Enjoyment and Better Understanding of Your Boat

INSTRUMENTS in a boat if used intelligently will help you to full enjoyment and avoidance of needless service calls which are annoying and lead to misunderstandings between yourself and the dealer. Most important of all is the compass. Get a good one, secure it in the location where it is to be used, have it adjusted, and then make a practice of laying out your course from the chart and steering by compass in clear weather. This practice will save you worry and avoid danger when you get caught in fog or low visibility. It is now safe to let her take a trick at the wheel as the compass error caused by corset steels has disappeared.

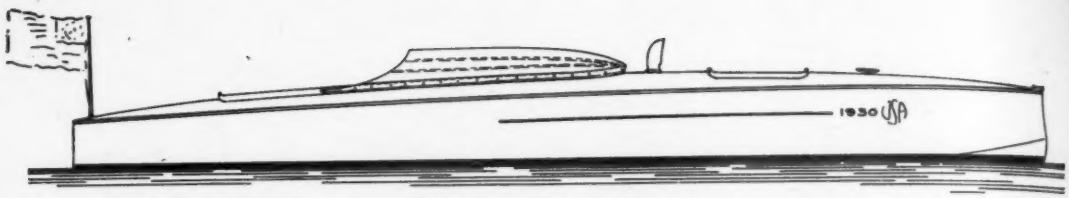
A tachometer is the best and most accurate method of determining how fast you are going and can give you the distance run if you will hold your engine speeds and record them. When you get your boat, run her over a carefully measured mile with a stop watch to catch your time with and against tide, a run each way and at several fixed rates of revolutions so you have a record of your standardization for future use, and keep the book containing the figures in the boat for use when you need to know how fast certain revolutions will drive you through the water. If your boat is a twin screw, run both engines at the same speed and avoid drag on your rudder from trying to hold her on the course with one engine running ahead of the other. Life is not all clear weather sailing, and in a fog you must know what speed you can make, at half and full speed. If you are racing it is important to keep your engine at top speed and the tachometer tells you that. A sudden slowing up probably means (if everything is running smoothly) that you have fouled your propeller. Clear it at once by some means, as you have power enough to tear your strut loose if it jams between the screw and the strut. A gradual drop may mean overheating — look at

(*Continued on page* 176)

Oil pressure gauge capable of reading to 120 lbs. per sq. in.



A Pioneer air gauge to indicate pressure on fuel systems



Design by William Atkin of a 20-foot hydroplane for the 5½-liter International class, complete plans and specifications for which appeared in the February and March issues of MoToR BoatinG

NEW INTERNATIONAL CLASS POPULAR

Indications of Many Boats Building in New 5½-Liter Class Which Will Provide Keen Racing at Big Regattas This Year

THE interest already shown in the new 5½-liter class seems to indicate that these boats are to be the most popular small boats for racing purposes as well as for general use that have ever been built. At least a dozen craft are assured for next summer's racing and the indications are that there may be double this number. Already a race for these boats has been definitely set to take place at Detroit during the Harmsworth regatta August 29 to September 2. It is quite probable that there will be International competition as it is reported that several boats are building in England and two in Canada. If sufficient interest develops in the East, a race will be scheduled during the Gold Cup regatta which takes place at Red Bank, New Jersey, August 16 and 17.

The plans for the 5½-liter International class were first announced in MoToR BoatinG several months ago. They provide for a hull at least 20 feet in length, either the displacement or hydroplane type, but with no other restrictions. The power plant must consist of a stock marine motor of a specified make of not over 335 cubic inches. The motors which have been specified are those built by Scripps, Gray, Chrysler and Lycoming. All of these manufacturers have models of approximately 135 horsepower which should give these boats a speed of around 50 miles an hour. With a dozen or more boats of this speed racing together, real competition and much thrill should result.

The fundamental object of the class is to produce the racing of boats which are reasonable in cost and up-keep, fast and seaworthy and powered with a stock motor which any person might buy on a moment's notice and after buying same would know that no other competitor had a specially built power plant to compete with him.

The history of racing in this country has proven over and over again that practically all class-racing has been killed due to the fact that one man would go out and have a motor specially built for him at a price far beyond the reach of the average man interested in racing. Such a motor would have from 50 per cent to 100 per cent more power than a motor in production of the same size. Such practice might be good for motor development but it was bad for racing.

The rules for the new 5½-liter class provide that the motor shall be *stock*. But just what is a stock motor? This always has been a joker in many similar attempts to regulate the power plants to strictly stock outfits. Oftentimes the manufacturers themselves being over-anxious to win would stretch a point and provide something *special*. This also had the effect of killing the class.

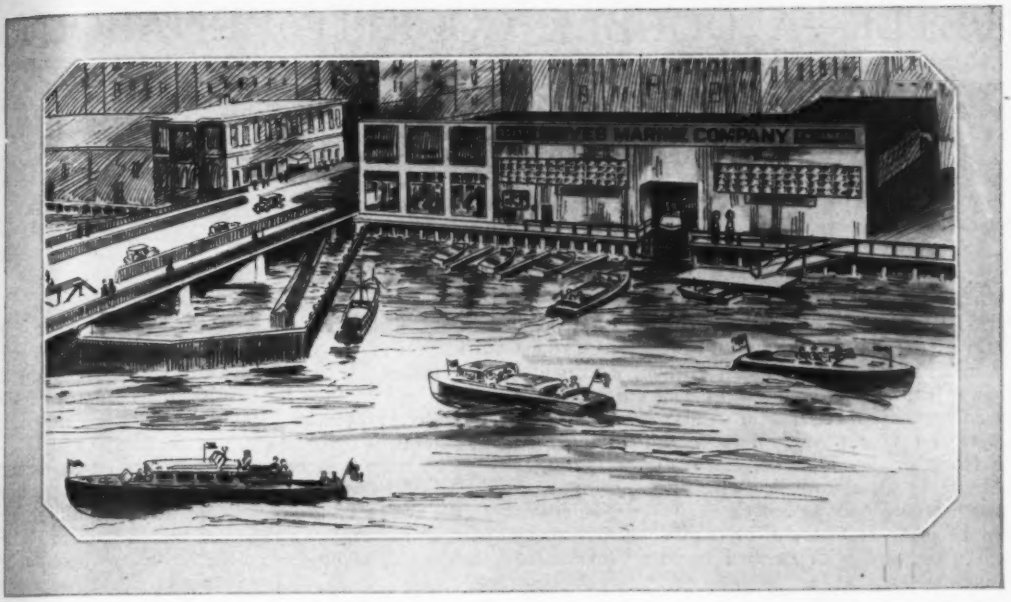
The Racing Commission of the American Power Boat Association believed that if the manufacturers of the several motors eligible for this class would get together and agree among themselves as to what they would or would not do to motors which they sold for these class boats as well as agree upon motor specifications which would be acceptable that an agreement could be reached so that the class would be a real success. Therefore, it was suggested that representatives of Scripps, Chrysler, Gray, and Lycoming meet and discuss these problems.

Such a meeting was held recently in Detroit and it is certainly refreshing to note that all the engine manufacturers seemed to be in entire accord as to the objects of this class and they went on record determined not to lend themselves in any way to the pepping up of motors or other rule beating practices.

Various plans were discussed as to the best manner in which to define stock motors and it soon became apparent that if any attempt were made to incorporate technical details in the rules proper, they would become entirely too complicated. It was, therefore, the consensus of opinion that the best way to handle the situation would be for each motor manufacturer to furnish the Race Committee with a statement of specifications of their stock motors and that it would be left to a Committee consisting of one man from each of the four motor companies and one from the Race Committee to pass technically on the power plants of the various entries immediately prior to the race, the findings of such a committee to be accepted as final.

It was decided that no variations in accessory equipment, even to the matter of reverse gears, carbureters, starters and flywheels were to be allowed other than possible changing in jetting or other adjustments of the carbureter such as any user might be inclined to make on a motor in normal service.

It was also the consensus of opinion that no rules should be set up to govern compression and that the most effective manner of controlling this matter of compression would be to determine upon one grade of fuel which all contestants would have to use, which fuel would be supplied to all contestants by the Race Committee. It is a fact that the character of the fuel automatically places limitation on the compression and with this condition incorporated in the rules prohibiting the use of benzol, picric acid or other dope other than Ethyl, *(Continued on page 180)*



A water front view of Boston's Service Center on Fort Point Channel, close to the South Station

MARINE SERVICE IN BOSTON

New Facilities Provided Near Business Center of Eastern City Are Most Modern and Adequate in All Departments

By FRANK M. PRENDERGAST

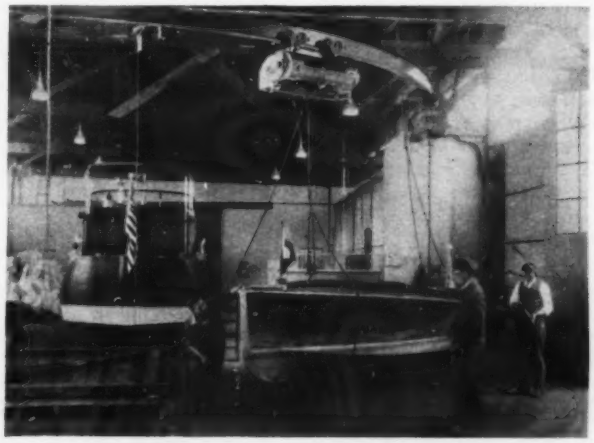
FEW large cities on the Atlantic seaboard can vie with Boston in the service it is now prepared to render the motorboat owner. A year ago when the National Association of Engine & Boat Manufacturers first proposed a municipal motorboat harbor adequate to the needs of local yachtsmen they started something. Private enterprise was quick to see the opportunity.

Four months later in July of last summer, the Noyes Marine Company opened its commuters' waterfront service on Fort Point Channel, a stone's throw distance from the South Station. And now, with the completion of the new Congress Street Bridge, the Noyes Marine Company on lower Congress Street will possess the distinction of having an anchorage nearer the heart of the city's business district than any other marine company in the East.

Situated on a deep water channel just off the inner harbor, it furnishes a protected anchorage to boat owners who commute in summer between their business offices and North or South Shore seaside homes. Formerly the commuter had to moor his craft in the exposed waters off the City Point Station of the Boston Yacht Club two miles out of the city. Needless to say, lack of facilities was fast discouraging the boat owner who wished to commute.

Perhaps the most conclusive proof in the wisdom of selecting a convenient waterfront site lies in the reaction of the boating public who have been quick to avail themselves of the service it renders.

The Noyes Marine Company's establishment extends a length of 210 feet along Fort Point Channel and is accessible from both the Summer Street and Congress Street bridges. The showroom, containing over 3,000 square feet of floor space, occupies the Congress Street end of the building, connecting with the shop which has a floor area of more than 9,000 square feet. In addition to this there are well-lighted offices, and rest rooms for patrons.



An electric overhead monorail hoist which can carry the entire boat to a convenient spot

A feature of the

(*Continued on page* 180)

PETER—A DOUBLE COCKPIT RUNABOUT

Further Details for the Construction of the Smart Little Runabout

21-Feet Length Which Combines Speed and Comfort

Designed Especially for MoToR BoatinG

By WILLIAM ATKIN

PART II

PETER is dressed up in windshield and spray hood in Figure 1. These seem to be necessary fittings on all small runabouts and, I think, worthwhile at that. Just as soon as speeds of over ten or twelve miles an hour are reached head winds become hard on the eyes and very tiring. The windshield must be made from Triplex Duplate, or some other form of non-breakable glass, ordinary plate glass being dangerous; it would only be broken anyway. The frame should be made from brass, of channel section about 1 inch wide, and with channel to suit thickness of glass used.

The spray hood over the after cockpit will have two brass bows bent to the shape of the forward end of the coaming. Then the bows are inserted in suitable pockets in the hood and hinge on a pin which projects from the side of the coaming. The skirt of the hood is fastened to the deck with short ties and into small screw eyes. If you will look up spray hoods in any marine hardware catalogue you will find all necessary fittings for these listed.

The construction plan which appeared in March MoToR BoatinG specifies the various materials, the keel being white oak sided 7 inches and moulded 1¾ inches. It should be in a single length; if however oak cannot be found that is long enough (the piece will have to be 19 feet 6 inches long) yellow pine can be substituted. Yellow pine is an excellent wood for boat building and is in some respects even better than white oak. Yellow pine holds fastenings well and will last for years under water or out.

The stem will be made from a hackmatack knee sided 2 inches: at the stem head it will be moulded 3 inches; at the L.W.L. 5 inches; and at the scarph 3½ inches. The stem will be fastened to the keel with three ¼ inch brass bolts, the heads of these are to be let into the keel having washers and nuts inside. A careful fit must be made of the scarph.

The stern will be made from mahogany about ¾ inch in thickness and with seams battened as indicated in the sketch Figure 6. There will be doubling pieces around the edges of the stern and a strip of ⅞ by 3 inch oak or mahogany up the center. These doubling pieces should be fastened with brass screws spaced closely. The stern will be fastened to the end of the keel with a bronze knee as shown. This knee can be made from ¼ by 2 inch tobin bronze. Note the lower eye bolt for the rudder hanging goes through this knee. Other details of the stern are shown in Figure 6 including the brass binding on the bottom and sides. This binding should be let in flush with the surface of the planking and fastened with flat head brass screws. It will all have to be filed smooth and should be left bright if the topsides are varnished.

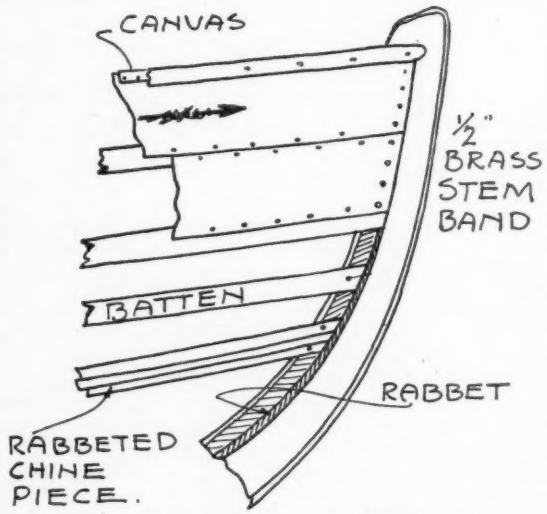
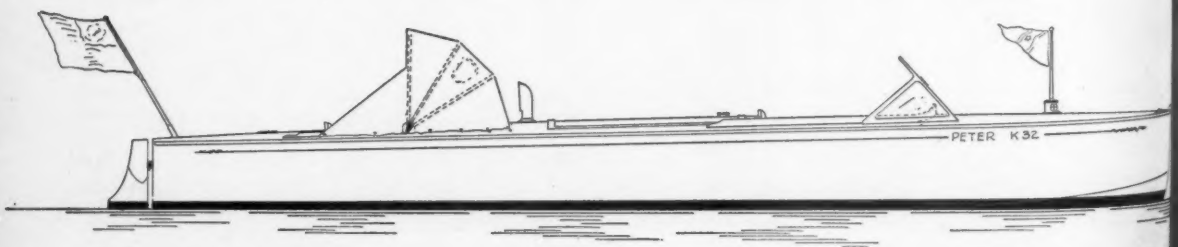


Figure 2. Showing the forward ends of side planking and rabbet in stem

The frames, of which there will be 11, will be made from ¾ by 1½ inch white oak and will be set on 20½ inch centers, same as the stations. At the corner of the chine the bottom and side members will be fastened together with ⅝ inch oak knees as shown. These knees will be on the forward face of each frame and will be fastened with brass or galvanized iron screws. The latter are the strongest. Hackmatack knees or knees of applewood can be used if oak is not easily obtainable.



Outboard profile of the runabout Peter as fitted with a windshield and shelter for after cockpit

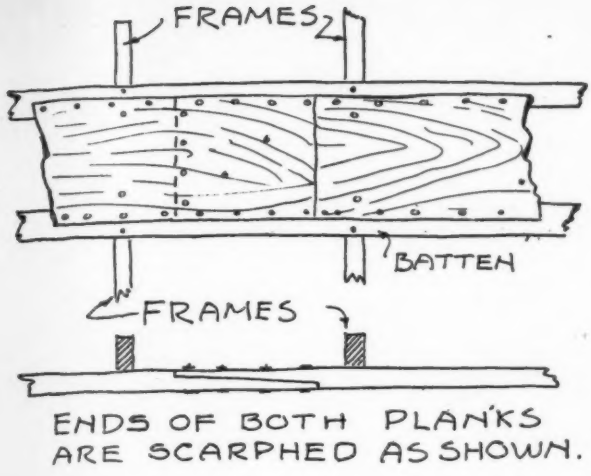


Figure 3. Alternate method of butting ends of planks

The bottom frames are joined at the keel with 1¼ inch thick floor timbers. These must be made to the heights shown on the plan at each station. The frames and floor timbers will be fastened together with brass or galvanized iron screws, and they must be well fastened because there is a great deal of strain in this part of the structure.

The floor timbers will be fastened to the keel with ¼ inch brass bolts, two to each floor, and in addition to these fastenings the heels of the frames will be screw fastened to the keel.

The chine logs will be made from yellow pine or oak, if the latter can be secured in a single length. A rabbet will be cut the full length of the chine logs for both the side and bottom planking. At each frame the logs will be through fastened with 3/16 inch brass bolts, the bolts to go through the chine knees rather than the frames. The logs will be made from 1¾ inch stuff. Figure 2 shows how the forward ends of the chines join the stem.

The planking will be made from ⅜ inch white cedar for the topsides and ⅝ inch for the bottom. The former will have four strakes each side. Seams will be backed with ¼ by 1½ inch oak battens and if you want a particularly nice job the screws can be driven from the batten and into the planking instead of the usual way. Many very fine boats are built and fastened in the former manner. Some years ago I saw a 30 foot boat that was completely planked and every fastening was driven from the inside and out! Not a plug or screw showed excepting those along the stem and in the stern transom. In Peter I should use brass screws into the frames and either screws or rivets into the battens. The planking below the chine will be ⅝ inch thick, white cedar. Four strakes will be used here, too. It is not necessary to fit the bottom planks so that there are four strakes the full length of the bottom. The outer seam of the garboard plank, which is the one next the keel can run in a straight line and as nearly parallel to the keel as possible. The other three planks can all be parallel and all of the same width amidships. Thus as the planks are laid each will be shorter than the one previously laid, the ends being jib shaped where they fit the chines. Battens will be required behind the seams of the bottom planks same as on the top sides.

When all the planking is on, the inside should be thoroughly cleaned out and given two coats of well thinned paint or red lead. Be sure the paint is thin because a thick coat will not dry properly, and if there is anything worse than a sticky coat of paint or a coat that is dry on the surface and soft beneath, I should like to see it. Remember always in painting that two thin coats well rubbed in are better than one thick coat that is slapped on.

The deck beams will be made from ¾ by 1¼ inch oak and set on 10¼ inch centers, in other words there is a deck beam on each frame and one between. The crown for the deck is given in the table of offsets. You will notice from the plans that there are several additional beams in way of the engine hatch. Also that there are doubling pieces for the secure attachment of the ventilator and bow light. These should be made from ⅞ inch oak.

There are four watertight bulkheads set on frames 3, 5, 8, and 10. Make these from the best quality plywood obtainable. It will be noticed that the bulkheads in every case are fastened to a pair of frames and the fastenings should be brass screws. Use waterproof glue between the faces of the frames and plywood. After this has thoroughly set paint well. Some form of drain plugs will be needed for the purpose of letting water flow from the watertight compartments. Perhaps it would be best to use screw deck plates about 4 inches in diameter; it will be easy then to reach in any of the compartments to sponge out. If the boat is built well there will be very little likelihood of leakage; but just the same boats are prone to leak and provision must be made to get rid of the bilge water.

Figures 3 and 5 give details for butting planking; one is about as good as the other although if the planking shows inside of course the scarphed butt is the best to use. It is also the most difficult to make.

Figure 2 is an interesting study of the plank ends, battens, mouldings, chine end, etc., at the stem.

The engine beds will be made from 1¾ by 5 inch white oak. Two additional floor timbers will be fitted as shown and fastened to the keel and planking. These need not be thicker than 1¼ inch, and will be made from oak like the rest. The bearers will be

(*Continued on page* 174)

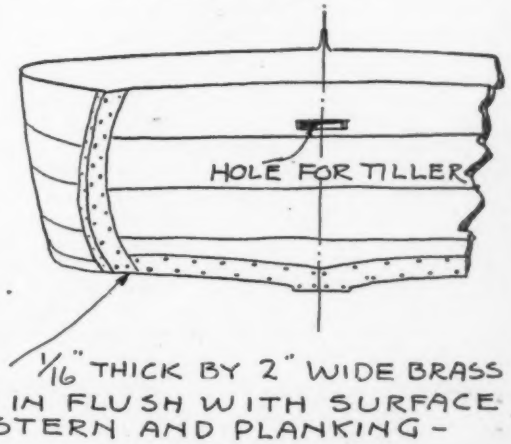


Figure 6. The brass binding around the transom at stern

LEILA, A SEAGOING RUNABOUT

An Excellent Up-to-the-Minute Design for an 18-Footer of a Unique Type Which Can Be Safely Used on Rough Water

Designed Especially for MoToR BoatinG

By WILLIAM ATKIN

PART I

LEILA is a departure from the accepted thing in runabouts, and it seems to me this little craft has many features that are distinctly worth while. There are many men who want a small open boat that has ability to keep going in roughish water in safety and comfort, so here she is. While a very little craft Leila is big in displacement, and freeboard. After all if one wishes to plug along comfortably and dry, freeboard is the thing to have in excess; it has to be a big sea, and a very steep one, that Leila's bow will not lift to. And the generous freeboard for the entire length of the boat assures dryness. This new one in the family of MoToR BoatinG's excellent brood of practical boats is a V bottom that will be easy to build and inexpensive. I have had a bid or two from some builders whose reputation is excellent and find that Leila can be built complete with suitable engine, hardware, painting, cushions, etc., for approximately $1,700.00. This means that materials alone will amount to about $750.00, so for the amateur builder she is an interesting prospect.

Over all she measures 18 feet 0 inches, the water line length is 17 feet 4 inches, breadth 5 feet 6 inches, and draft 1 foot 3½ inches. The freeboard at the bow is 2 feet 3 inches, and at the stern 1 foot 10 inches. The sheer is a straight line from stem to stern also the lines indicating the edge of the raised deck and abreast the cockpit. The sections below the chine show a straight V bottom, and above the chine all sections are moulded. Straight sections below the chine produce a beautifully fair surface and have the advantage of being easily reproduced in wood. The latter is very much of a consideration for the amateur builder, and an advantage for the professional because of the saving in time needed for building.

The keel is a real keel and extends the full length of the boat. Several feet forward of the stern post the bottom of the keel sweeps up sharply to a point 3 inches below the center of the propeller shaft. This gives protection to the propeller and rudder in case of grounding and also makes a better bottom line for hauling out purposes. Cutting off the tail end of the keel permits the water to flow a little more freely to the propeller and offers less resistance to turning than would be the case with a deep keel aft. It is a good plan to round off the bottom of the keel for its full length; not only will this pass through the water easier, but there will be no sharp corners to bash in and sliver up when the boat is being moved about on land. This detail is, however, not shown on the plans. Another good idea is to run an inch wide strip of half oval brass the full length of the keel, tapering this forward to fair into the width of the stem band which should be ½ inch wide.

There will be a piece of moulding with brass edging near the water line aft as shown; then a mahogany half round moulding along the sheer line, this being ⅞ inch wide. A ⅞ inch moulding will also be fitted along the deck edge. The latter two should be varnished, but the guard strip aft will be best if it is painted.

By all means run in the gilded cove under the sheer moulding for this puts a finish on the job that can be gotten in no other way. This is simply a shallow groove made with a half inch hollow plane. The plane is guided by tacking a fair batten along the sheer in the position shown. Ribbon gold leaf is put in this after the painting is finished.

I think I should finish Leila in paint rather than varnish, under water my favorite anti-fouling white will go well, paint the topsides a very dark blue. Now the cross hatched portion of the sheer abaft the raised deck indicates white; the curved line being simply the division line between the two colors. Decks will look well if painted fawn; for gosh sakes, though, do not use red buff color with blue topsides! The trim should be natural mahogany.

The cockpit is 6 feet 10 inches long which gives plenty of room for two comfortable seats, the forward one being 4 feet in width and the aft one 3 feet 6 inches wide; just measure these lengths off and see how much room there is in this little boat. There is a washboard either side the cockpit 7 inches wide, and the seats are set low so as to make one feel inside the boat rather than on top of it. The bottoms of the seats should be set at an angle with the backs square thereto. Now with kapoc filled cushions made as shown in the arrangement drawing the seats will be comfortable.

A very bad thing about many runabouts is the provision, or perhaps I should say, lack of provision made for attaching and leading the mooring line. A closed fairlead at the stem head makes a most satisfactory arrangement. A rather neat way to manage this is to have a ⅝ inch diameter manila line made fast to the combination sailing light and bitt; lead this line through the bow fairlead leaving it sufficiently long to reach from the bow to the cockpit floor on the port side, the same side as the steering wheel. Have a galvanized gaff topsail hook or other suitable snap hook spliced into the cockpit end of the painter. Now all one has to do to cast off is to run up to the mooring, unhook the painter keeping the hook in the cockpit and the line stretched out along the forward deck. The process is reversed when picking up the mooring. This is not only quicker than tieing knots, but safer, especially for those of us who do not pretend to be deep sea sailors.

The ports in the top strake are for ornamental purposes only and of course need not open; somehow these add considerable character to the craft and while they might be dispensed with are not costly and should be fitted. Something like the lining on the newer automobile bodies; the car would run as well without

CHINE
L.L. 2
L.L. 4
SHEER
DECK
DECK
SHEER
CHINE
L.L. 4
L.L. 2
L.W.L.
L.W.L.
RABBET
CHINE
SHAFT
RABBET
KEEL
BASE
36
36
36
36
36
28
CURVE OF SECTIONAL AREAS
Scale
CHINE LOG 2½ x 3 Y. PINE
INSIDE STERN
COAMING ½" MHGY
SEAT
SEAT
HATCH SAME AS DECK
GASOLINE TANK BUILD FROM WORK
4 CYL MOTOR
3 DIA DEADS LIGHTS
CHINE
KEEL AND DEADWOOD 3½ W. OAK
SECTION AT STA 3
INWALE ½ x 2 CEDAR
ENGINE BEDS 2½" W. OAK
CLAMP 1⅛ x 2" FIR
SIDE FRAMES ⅞ x 2 OAK 18" C TO C
DECK BEAMS ⅞ x 2 W. OAK 18" C TO C
MHGY MOULDING
ENGINE BEDS 2½" W. OAK
L.W.L.
L.W.L.
36
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MoToR BoatinG's

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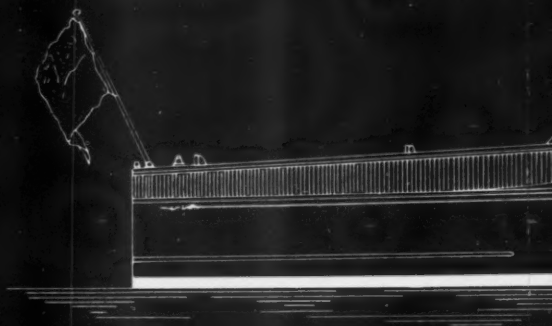
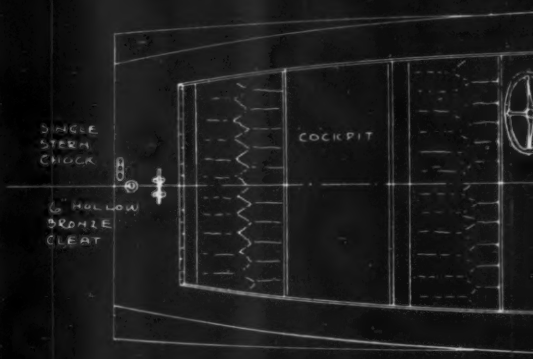
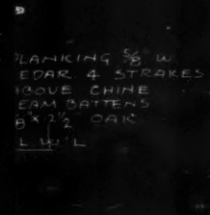
AN 18 FOOT DOU

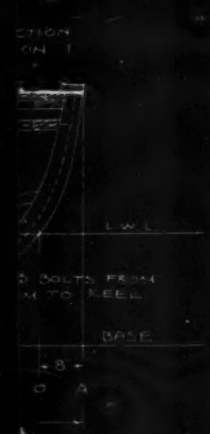
Designed Especially for



3/8 Inch = 1 Foot





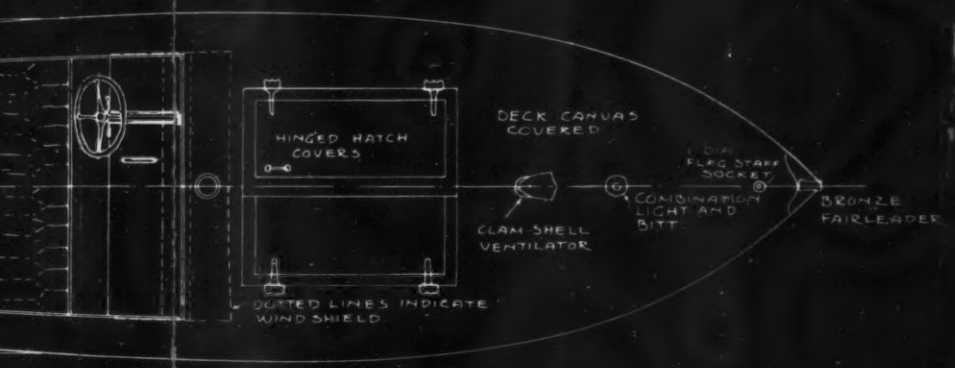


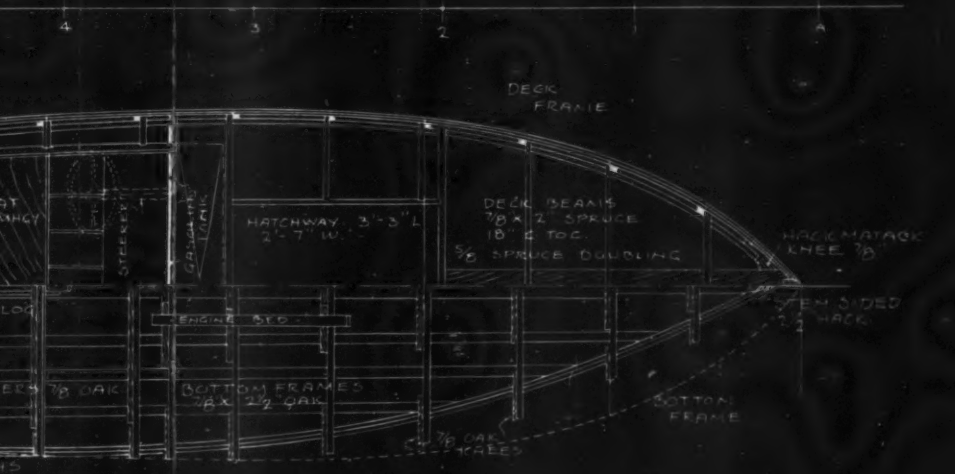
G's Build A Boat Serie

LEILA"

DOUBLE-COCKPIT RUNABOUT

ally for MOTOR BOATING *by* WILLIAM ATKIN




DECK FRAME
HATCHWAY 3'-3" L 2'-7" W
DECK BEAMS 7/8 x 2" SPRUCE 18" c to c
5/8 SPRUCE DOUBLING
HACKMATACK KNEE 7/8
STEM SIDED HACK
ENGINE BED
BOTTOM FRAMES 7/8 x 1 1/2 OAK
BOTTOM FRAME
7/8 OAK FLOORS

these, but the class and character would be lost. I should use a motor of moderate power for Leila; not over 20 h.p. Remember she was not designed for speed, 12 miles is her limit. Any one of the excellent little four cylinder units would be ideal for installation in this boat. Use a wheel of generous diameter and low pitch. It is impossible to specify the correct size propeller without knowing the power and type of motor installed.

One of the advantages of a small boat is that the equipment required by the Government is not elaborate. You can use a combination light and if your motor is equipped with electric starter by all means use a fixture like the one shown on the plans. Every boat must carry a fire extinguisher, life preservers for all those aboard, whistle, fog horn, and two copies of the pilot rules. Besides these every boat should have a good anchor, a long length of rope, and a straight grained long handled boat hook or oar, and a good bilge pump!

The gasoline tank can be carried under the deck between the cockpit bulkhead and the hatch and if this is formed as indicated it will be little in the way and have ample capacity for the average runs one is likely to make in a boat of this kind. If, however, more fuel capacity is needed, fit cylindrical tanks either side the engine. There is plenty of room here.

There are several well designed and well made geared steering gears on the market and one of these would be a very fine method of control for Leila. I have shown the old fashioned drum and quadrant with tiller rope. This, if the rope is securely fastened on the drum will prove to be very reliable. There is one thing that is nice about this kind of gear. That is if you let go the wheel the boat will straighten out on her course and in rough water this is a comforting thing to know. Also I think it is worth a lot to feel the rudder at all times.

Five frames set on 36 inch centers and the stern board will need to be made. Now it will be necessary to lay the lines down at full size before these can be gotten out. This is not a difficult thing to do and will take about a day's work.

The chances are that if Leila is amateur built the space for laying down will be limited and the floor may not be smooth. Then I should lay the lines down on heavy building paper. Two widths will be needed to make a sheet slightly over 18 feet long and 4 feet 3 inches wide.

A base line must be marked along the edge of the paper and perpendiculars erected at 36 inch centers, with one additional 8 inches abaft the bow, or Sta. A. These eight vertical lines will represent the location of the stem, the fore end of the L.W.L., and the five frames.

The sheer, the L.L. 2 and 4, the chine, and the deck lines will next be marked. Then the rabbett line and the bottom of the keel. To conserve space the curved lines showing the deck, L.L.'s, chine, etc., can be drawn over the work just mentioned. It might be well to use different color pencils so as to easily distinguish between the two sets of lines. With this finished the sections can be drawn in. These also over the rest of the lines. This sounds complicated, but is really very simple.

All heights and widths not given on the plans are given in the table of offsets. This is read as follows: Beginning at the left you will find on the table of offsets: under heights: L.W.L. to Deck Line. You will find that at station O this is 27 inches and that the next dimension given is under station 3. Here the height is also 27 inches which means that the deck line from station A to 3 is parallel to the L.W.L., and 27 inches above it. On the drawing of the lines it will be noticed that the deck line runs to a point 1 foot abaft station 3. Turning to the table of offsets the next dimension on the "L.W.L. Deck Line." Line is at S. And at this point the deck is 22⅜ inches above the L.W.L. Therefore a straight line connecting S with the deck line, 1 foot abaft station 3, will complete the deck line.

The second line in the table of offsets gives the crown of the deck at every station.

The third line gives the dimensions from the base to the Sheer; next line Base to Chine, and so on throughout the table.

All half breadths are given in the second part of the table. These are taken off the same as the heights. Perhaps I should say that as the dimensions are taken from the table of offsets they should be laid on the full size drawing and just as soon as a particular line is spotted on all of the perpendiculars or half breadths (which are the same things as the stations) a batten should be tacked down so as to run through them. There will be places where the batten will not come to the spots, and in this case you must use your best judgment, referring to the plans so as to locate the error. The error may be mine because it is the easiest thing in the world to make a slip in setting down the figures on the table of offsets. However, there will not be many figures wrong. One of the reasons for laying the lines down full size is to check the dimensions given.

Next month I shall conclude this article on Leila and begin a new one covering the design and construction of a little boat designed especially for amateur builders. She will be interesting, easy to build, inexpensive, and withal a fine little boat. For the amateur who intends to build Leila blue print copies of the designer's drawings are available and will simplify the work of building.

TABLE OF OFFSETS NO 250. LEILA.

STATIONS	A	O	1	2	3	4	5	S
↔ HEIGHTS ↔								
L.W.L. TO DECK LINE	27	-	-	-	27	-	-	22⅜
DECK LINE TO DECK CROWN	-	-	1¼	1¾	1⅞	-	-	1
BASE TO SHEER	42½	42¼	41½	41	40½	40	39¼	38½
" " CHINE	-	26¼	21¼	20¼	19¼	19	19	19
" " RABBET	-	24	11	9¾	10½	12	14½	17½
" TO BOTTOM OF KEEL	-	21½	8¾	7	5	3¼	3½	-
" " ℄ OF SHAFT	-	-	-	23½	19	14½	10	-
↔ HALF BREADTHS ↔								
DECK LINE	-	-	24	31¼	33	31⅞	28⅞	22¾
SHEER	-	-	19⅞	28⅞	32½	32½	30⅜	26
L.L. 4	-	-	17⅞	28	32¼	33	31	27
L.L. 2	-	-	15½	26½	32	33	32	29½
CHINE	-	-	14⅛	25¼	31	32⅜	31	28

DIMENSIONS IN INCHES. WILLIAM ATKIN.

The table of offsets for the 18-foot runabout Leila containing all dimensions for laying down the lines

SMALL MOTOR BOATS

Their Care, Construction and Equipment

A MONTHLY PRIZE CONTEST CONDUCTED BY MOTOR BOATMEN

Questions Submitted for the June Contest

1. Describe and illustrate how the leaky seams in a boat hull can be located and caulked without the necessity of recaulking the entire hull.

(Submitted by V. L. S., Wilmington, Del.)

2. Give a systematic procedure to be followed in locating the trouble when the motor suddenly stops or refuses to run. Give details of any unusual experience you have had with your motor along this line and tell how you located the trouble.

(Submitted by E. F. C., Cambridge, Mass.)

FINISHING A COPPER EXHAUST TUBE

Outboard End of Light Exhaust Pipes Require Special Consideration to Allow for Expansion and Provide a Watertight Finish at Transom

Answers to the Following Question, Published in February MoToR BoatinG

What method have you found practical for finishing off and making water-tight the outboard end of a copper exhaust pipe?

COPPER EXHAUST ENDS
(The Prize-Winning Answer)

IN order to provide strength, water-tightness and a certain amount of flexibility, some sort of stuffing box fitting must be used, or the outboard fitting and the end of the copper exhaust pipe connected by a short length of steam hose (the steam hose can only be used when water is run through the exhaust).

The accompanying sketches will show several methods with different kinds of fittings, employing stuffing boxes, flanges, unions or steam hose. These installations can be varied to suit your individual needs, for instance, in case it is desired to use an inverted scoop bronze exhaust fitting without the union, the drilled pipe cap and lock-nut used in another sketch can be substituted to make the inboard end of the exhaust fitting a very serviceable stuffing box. Likewise the flanges, steam hose, etc., can be used with different types of exhaust fittings so as to suit your case.

The two installations shown which lend themselves extremely well to most any kind of service are those shown using the standard female stuffing box fitting for large installations where there is considerable strain and vibration, and the one using the two cut-away standard brass through-hull fittings for the lighter and smaller installations. Either of these installations will be found practical, strong, flexible to a certain degree, water-tight and with sufficient provision for any expansion.

The sketches show sufficient detail to enable anyone to readily understand how the standard stuffing box installation is used. Purchase a female bronze stuffing box large enough to accommodate the brass or bronze sleeve which has been brazed or welded over the end of the copper exhaust tube, also a bronze or brass standard through-hull fitting of the correct size so that it will screw into the threaded inside section of the stuffing box sleeve. Make the installation just as the sketch shows, using asbestos gaskets, through bolts, reinforcing block and asbestos packing in the stuffing box gland. After the stuffing box is in place, screw the brass or bronze through-hull fitting in from the outside, using a deck-plate key or some kind of spanner wrench into drilled holes in the outside of the flange of this fitting, being sure to get it tight. The sleeve welded or brazed to the copper exhaust tube is used to take the wear of the packing, as vibration causes a certain amount of working of the exhaust

RULES FOR THE PRIZE CONTEST

READERS are urged to consider the above questions for the June issue, and send answers to them to the Editor, MoToR BoatinG, 57th Street at Eighth Avenue, New York, N. Y. Answers should be (a) in our hands on or before April 25, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The names will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before April 15. The editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions above, any article or articles sold by an advertiser advertising in the current issue of MoToR BoatinG of which the advertised price does not exceed $25 or a credit of $25 on any article which sells for more than that amount. There are two prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer both.

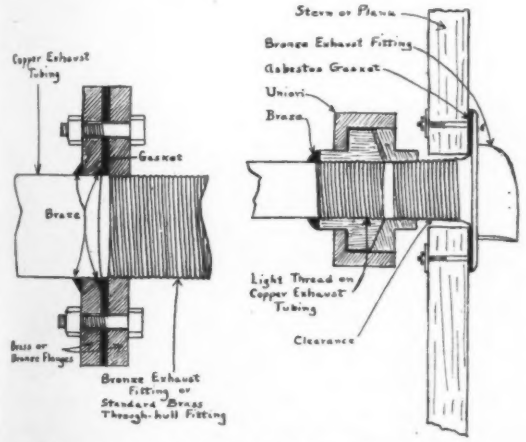
For answers we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR BoatinG of which the advertised prices does not exceed $5, or a credit of $5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

pipe in the packing gland which would soon wear away the softer copper.

The other installation, that using the two through-hull fittings, is also clearly shown. Two such fittings are purchased, making sure to get them a neat fit for the outside of the copper exhaust pipe. If impossible to get them of the correct size, obtain two fittings a trifle smaller and have reamed out so as to fit. Purchase one short brass or bronze sleeve and have it threaded on the inside to fit the threads on the outside of the sleeves of the through-hull fittings. The long sleeves on these through-hull fittings are cut off with a hack-saw, leaving each sleeve from three-quarters to an inch in length, depending on the thickness of the hull and reinforcing block. The lower lips of these sleeves are then scraped or filed away until they are beveled as shown in the sketch, so as to compress the packing and squeeze it down upon the outside of the exhaust pipe. The outside through-hull fitting flange is then drilled for four bevel head bolts. The flange of the inside fitting is cut away with a hacksaw so that it is hexagonal and can be tightened with a wrench to tighten



A brazed end and a form of union suggested by V. L. S.

the packing by screwing the inside fitting farther into the brass sleeve. Of course, it is possible to use this installation for heavier work by brazing or welding a sleeve over the copper exhaust tube and using larger through-hull fittings. In this particular installation, use a canvas gasket well soaked in paint between the hull and reinforcing block.

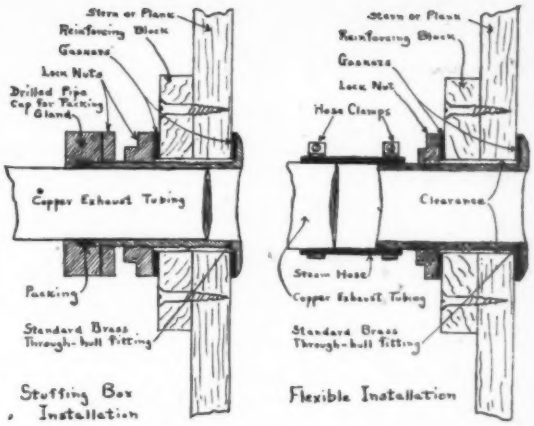
If either of the different stuffing box type installations are used, be sure that the section of the exhaust pipe or sleeve extending into the packing gland is smooth, otherwise it will soon cut the packing away and cause it to leak.

Although, in each of these sketches, provision has been made for protection of the woodwork from burning, it is preferable to run at least a little water to cool the entire exhaust line, and the entire installation will have a much longer life.

V. L. S., Wilmington, Del.

A TIGHT-CONNECTION

THE problem of finishing off and making water tight the outboard end of a copper exhaust pipe has been a perplexing one to many. A few of the causes among many is the fact that the tubing cannot be worked in the same manner as brass pipe, due to the thickness of the material, and also on account



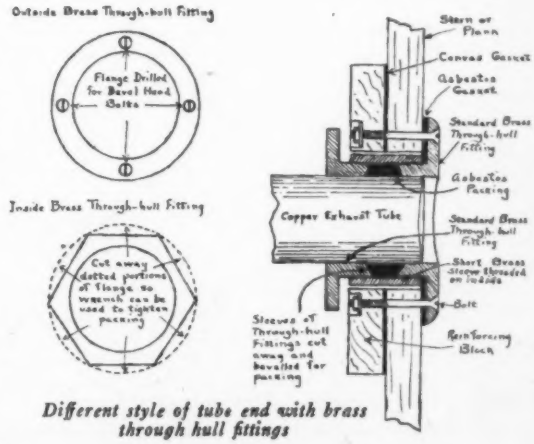
Other forms of tube endings by V. L. S. with brass fittings and rubber steam hose

of the exhaust heat making it impracticable to resort to solder for making the connection tight.

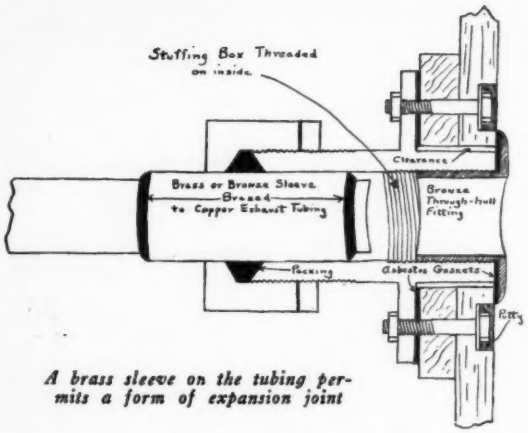
The method shown on the accompanying drawing will make a water tight connection, at the same time eliminating threads on the tubing, and will also allow for the expansion and contraction of the tubing due to changes in the temperature of the material.

The transom is drilled to suit the outside diameter on the flange, and then counterbored to suit the diameter of the flange boss, after which the transom is drilled to suit the outside diameter of the sleeve. Dimensions are omitted herein as the same will depend upon the size of the particular job to be done. The flange is turned of brass similar in design to that shown on the drawing and is laid in the transom so that the face is flush with the face of the transom on the expose side. Gaskets made of asbestos or any heat resisting material are provided as shown. The flange is threaded to suit the thread of the brass sleeve. The sleeve which has a full running thread and the flange are made up tight after which a gasket and plate are placed over the sleeve on the inside of the transom and the assembly is made up tight by means of the locknut. This arrangement of parts forms a good substantial water tight connection to which the copper tubing may be connected.

The inside diameter of the sleeve is made to be slightly over the outside diameter of the tubing, so that the tubing may be slipped inside of the sleeve freely. The backnut which is threaded to suit the sleeve is


Outside Brass Through-hull Fitting
Flange Drilled for Bevel Head Bolts
Inside Brass Through-hull Fitting
Cut away dotted portions of flange so wrench can be used to tighten packing
Stern or Plank
Canvas Gasket
Asbestos Gasket
Standard Brass Through-hull Fitting
Asbestos Packing
Copper Exhaust Tube
Standard Brass Through-hull Fitting
Short Brass Sleeve threaded on inside
Bolt
Sleeves of Through-hull Fittings cut away and beveled for packing
Reinforcing Block

Different style of tube end with brass through hull fittings



A brass sleeve on the tubing permits a form of expansion joint

made with a shoulder as shown. The shoulder on the backnut serves to bear against the edge of the knife edge ferrule when screwed up tight. The tightening of the backnut wedges the knife edge ferrule between the backnut and the tubing at the same time the asbestos packing between the backnut and the knife edge ferrule make water tight the connection between the tubing and the sleeve.

The writer has used similar connections in compressed air work where the pressure has been as high as 125 pounds and where there has been considerable vibration with perfect success.

F. W. L., West New Brighton, N. Y.

FINISHING THE EXHAUST PIPE

IF the transom is square with the center line of the pipe, the hole through it for the pipe can be drilled straight in with an expansion bit, but if it is at an angle, drill the hole somewhat smaller and rasp it out to the proper bevel. Coat this bare wood with several coats of waterproof paint or varnish. This hole should be a snug fit for the pipe.

Push the pipe through the hole and when it is in the proper position scribe a line all around it flush with the outer surface of the transom. Do not saw off the end but leave about 2 inches at least beyond this scribed line. Take it to a coppersmith and have him hammer a flange at the scribed line and let him cut off the pipe at the point he thinks proper. Unless you have successfully done hammered metal work, do not attempt this job, for a coppersmith can do a good job for a few dollars.

Smooth off the hammer marks from the outer surface and polish it. Drill for small bolts for fastening it to the transom. Put under the flange a light canvas gasket covered with thick white lead both sides. When the flange is drawn up tight, this joint will be tight.

If you want to do a similar job yourself without hammering on the flange, you can make a pattern similar to a floor flange sold for railing work, with a boss extending inwards along the pipe. This boss will have to be parallel to the pipe, no matter how the transom slopes. You can file the brass casting made from this pattern to a smooth finish without machine tools. Make the bore a tight fit for the pipe, press the pipe into it and fasten with copper rivets around the boss. Saw off the copper pipe flush with the outside of the flange and then hammer this edge against the casting. This hammering will expand the pipe tight against the casting and if your fitting work has been fairly accurate, the joint will be watertight, but you may solder it around the inner edge if you prefer although soldering alone is not recommended for connecting the flange to the pipe.

Of course with this fitting, the hole through the transom must be larger than the pipe but otherwise it is made as described above, and when ready for assembling, the method of attachment with the canvas gasket, is the same as described above.

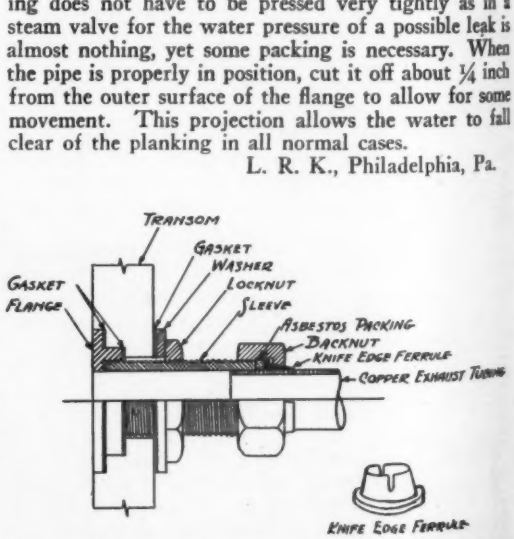
These two methods are of the rigid type and can be used on small work and where conditions inside permit of some expansion being taken care of. In cases where the expansion question raises a doubt the following expansion fitting has been used successfully:

Cut the hole through the transom as before but make it from ½ to ¾ inch larger in diameter than the pipe and also put a reinforcing block on the inside with the inner face at right angles to the center line of the pipe. Attach this block with a white lead gasket between it and the transom and make it about 3 inches or more larger in diameter than the hole. Paint the bare wood to make it watertight.

Insert the pipe and center it temporarily in the hole with small strips of wood. Cut out a washer or flange from sheet brass or copper, ⅛ to ¼ inch thick and about 2 inches larger in diameter than the hole in the transom. File the hole in this washer to fit the outside of the pipe snugly. Put a canvas gasket under this flange, using plenty of white lead and draw it up tight to the transom with bolts and wipe off the paint which squeezes out. The bolt holes should be parallel to the center line of the pipe and if the transom is inclined the bolt heads can be easily bent to set flush with the face of the flange. These bolts extend about 1 inch from the inner surface of the reinforcing block and pass through another washer, drawing this inner washer up tight against the reinforcing block. A canvas gasket is used under this washer the same as the outer one. The hole in this washer is a snug fit for the pipe.

These parts can be bolted up temporarily and the pipe should be just loose enough to slip through the holes in the washers. Then make the job permanent and pack the space between the pipe and the wood hole and between the washers with asbestos packing of the rope variety mixed with graphite grease. This packing does not have to be pressed very tightly as in a steam valve for the water pressure of a possible leak is almost nothing, yet some packing is necessary. When the pipe is properly in position, cut it off about ¼ inch from the outer surface of the flange to allow for some movement. This projection allows the water to fall clear of the planking in all normal cases.

L. R. K., Philadelphia, Pa.



A convenient tube arrangement by F. W. L. follows good practice and will hold securely

A PORTABLE SMALL BOAT LANDING

An Inexpensive and Easily Constructed Arrangement Which Will Provide a Satisfactory Landing Place for the Small Runabout or Cruiser

Answers to the Following Question, Published in February MoToR BoatinG

Describe and illustrate a portable landing for small boats which may be taken up and stored during the winter

PROVIDING FOR THE SMALL BOAT

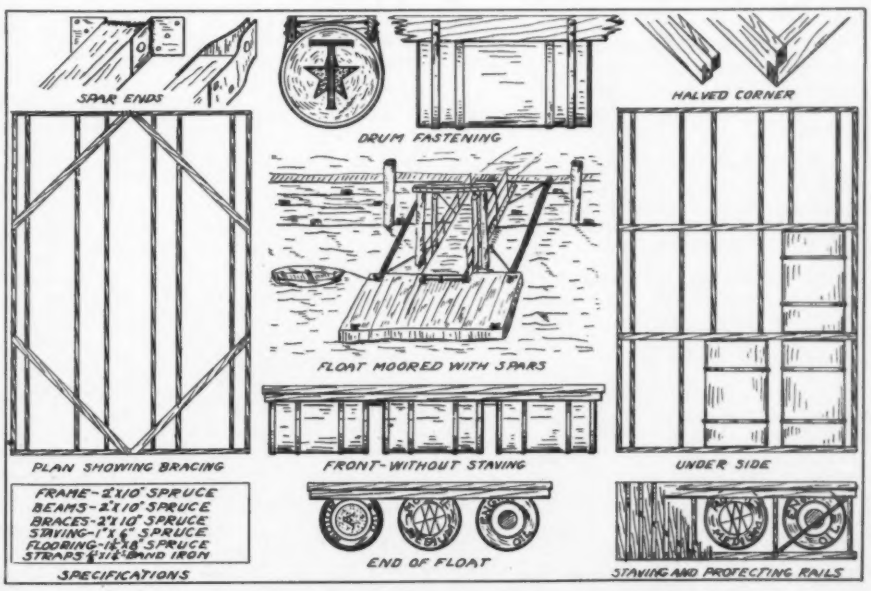
(The Prize-Winning Answer)

LANDING small boats alongside and climbing up a dock is rather unhandy, especially when there are supplies to be unloaded or taken aboard. It is somewhat risky to stand on the side of an outboard motor boat or a light runabout and at the same time lean against the dock in an endeavor to climb up. This is a good way to get a ducking, if you are not careful. Most of the small boats are either of these types, therefore a float is necessary for easy and safe landing. The float rises and falls with the tide and the distance to step in getting ashore or boarding is always the same. There will be no slippery boards or timbers to walk over at low tide as is the case with fixed steps or ladders.

The most practical landing for small boats is a float that can be easily taken ashore at the end of the season and put overboard and anchored before the boats go in commission. Three types of floats come to mind. In most cases the cost of a scow float makes this type prohibitive and it would be rather heavy to handle without a marine railway. A timber float will be found exceptionally rugged if well fastened together, but on account of its weight will not be considered here. A light, easily handled float supported by empty oil drums would seem to be the most practical. Wood barrels will be good for the first season, but after being exposed to the weather all winter are likely to fall apart. If all the barrels hold together, the float can not be used until the barrels have soaked up and been pumped out. The float may be any desirable size and the fellows around the club can do the work. This type of float will be found serviceable and inexpensive both to construct and maintain. It will be light enough to be easily hauled up on the beach above the ice. A tackle block and some rollers and a couple of friends can soon do the trick.

Opinions will differ as to size. A width of about 8 feet by 10 feet in length would appear sufficient for small boats and may be supported by from six to nine drums depending on the possible load. Use your own judgment, but make the dimensions with an allowance for clearance between the drums, in multiples of 2 feet by 3 feet. A 60-gallon oil drum measures approximately 2 feet in diameter by 3 feet in height. Spruce timber and boards are preferred with fir a close second. Yellow pine is too heavy. The outer frame is made of 2 by 10s with the corners halved and spiked each way. The beams are 2 by 10s spaced to let a drum lie between two beams with a 2-inch clearance from the deck. Fasten the frame and beams with 40d galvanized spikes and be sure that the galvanizing is by the hot dipped process. Galvanizing by other processes gives a nice smooth nail which will last around the water about as long as a plain cut nail. As the drums are straight sided except for two raised ribs, no chocks are necessary. Set the beams a shade close, bevel the edges a little and cut notches for the ribs. This allows a bearing full length of the drums.

Build the frame right side up and cut in the braces. Space the beams by placing three drums on an end piece and marking around their heads. Lay the braces on the frame and after marking along their sides notch out so that they are flush with the beams and frame. From now on the construction will be easiest if built upside down. Level roughly and place the drums. Those at the ends should touch the end pieces and the center drums are evenly spaced between. Mark the position of each drum, make a pattern for the bands to hold them in position and remove for painting. In addition to the bearing against the sides of the beams 2 by 4s should be nailed between the beams so that the drums also bear here; (*Continued on page* 188)



A convenient arrangement by W. B. M. showing how a simple dock for small boats can be constructed

AMERICAN MOTOR BOAT RECORDS

(*Continued from page 20*))

MILE TRIALS, NAUTICAL MILES

CLASS B, DIVISION I

Baby Brontosaurus II, driven by Bill Lyon, at Newport Beach, Calif., Oct. 6-7, 1929. Built by Crandall Boat Co. Johnson 16 engine. Speed 36.185 nautical m.p.h.; 41.613 m.p.h.

CLASS B, DIVISION II

Salome, driven by A. G. Martin, at Newport Beach, Calif., Oct. 6-7, 1929. Built by F. V. Pierce. Johnson 16 engine. Speed 36.063 nautical m.p.h.; 41.472 statute m.p.h.

CLASS C, DIVISION I

Bossert Pirate, owned by Walter Peterssen, at Albany, N. Y., July 5, 1929. Built by Bossert. Evinrude engine. Speed 34.05 nautical m.p.h.; 39.15 statute m.p.h.

CLASS C, DIVISION II

Black Maria V, driven by Al Thomson, at Newport Beach, Calif., Oct. 6-7, 1929. Built by Al Thomson. Evinrude C engine. Speed 37.058 nautical m.p.h.; 42.617 statute m.p.h.

CLASS D, DIVISION I

Big Ben, owned by Harold Chapman, at Albany, New York, July 5, 1929. Built by Hallock. Johnson engine. Speed 38.09 nautical m.p.h.; 43.80 statute m.p.h.

CLASS D, DIVISION II

Blue Streak, driven by H. G. Ferguson, at Newport Beach, Calif., Oct. 6-7, 1929. Built by Lake Elsinore Boat Works. Johnson 32 engine. Speed 41.503 nautical m.ph.; 47.728 statute m.p.h.

FIVE MILES

CLASS A, DIVISION I

Strange Interlude, owned by James Sullivan, at Boston, Mass., Oct. 5, 1929. Built by Porteus. Lockwood engine. Speed 23.29 m.p.h.

CLASS A, DIVISION II

B2, driven by A. E. Sutherland at Worcester, Mass., May 30, 1929. Built by Herbst. Lockwood engine. Speed 25.50 m.p.h. (4)

CLASS B, DIVISION I

Sweet 16, driven by N. C. Blanchard, at Cross Lake, La., August 4, 1929. Built by Ashbridge Boat Works. Johnson engine. Speed 36.95 m.p.h.

MADE UNDER NEW 1930 RULES

Flying Cloud II, driven by Harry Arnold at Lake Merritt, Oakland, Calif., Jan. 1, 1930. Built by Sulmock. Johnson engine. Speed 36.735 m.p.h.

CLASS B, DIVISION II

Ohkay, driven by H. S. Ferguson, at Peoria, Ill., Oct. 15, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 40.43 m.p.h.

CLASS C, DIVISION I

Vagabond, driven by B. A. Wheeler, Salton Sea, Calif., Dec. 14-15, 1929. Built by Elsinore. Evinrude engine. Speed 41.09 m.p.h.

CLASS C, DIVISION I

Blue Streak, driven by H. G. Ferguson, Salton Sea, Calif., Dec. 14-15, 1929. Built by Elsinore. Evinrude engine. Speed 42.35 m.p.h.

MADE UNDER NEW 1930 RULES

Blue Streak, driven by H. G. Ferguson, at Lake Merritt, Oakland, Calif., Jan. 1, 1930. Built by Elsinore. Evinrude engine. Speed 39.13 m.p.h.

CLASS D, DIVISION I

Peggy Lee, driven by Floyd Hodges at Cross Lake, La., August 4, 1929. Built by Ashbridge Boat Works. Johnson engine. Speed 41.06 m.p.h.

MADE UNDER NEW 1930 RULES

Lazy, driven by Francis Wilber, at Lake Merritt, Oakland, Calif., Jan. 1, 1930. Built by Wilbur. Johnson engine. Speed 39.824 m.p.h.

CLASS D, DIVISION II

Blue Streak, driven by H. G. Ferguson, Salton Sea, Calif., Dec. 14-15, 1929. Built by Elsinore. Johnson engine. Speed 45.34 m.p.h.

CLASS E, DIVISION I

Thoroughbred Baby, owned by Col. S. Tooey, at Boston, Mass., October 5, 1929. Fay & Bowen boat, Johnson engine. Speed 34.82 m.p.h.

CLASS E, DIVISION II

Ludington, driven by J. Dunnell, at Worcester, Mass., May 30, 1929. Ludington boat, Johnson engine. Speed 40.36 m.p.h. (5)

SIX MILES

CLASS B, DIVISION I

Crandall Comet, driven by Charles Adams, at Newport Beach, Calif., Oct. 27, 1929. Built by Crandall Boat Co. Johnson engine. Speed 34.269 m.p.h.

CLASS B, DIVISION II

Blue Streak, driven by H. G. Ferguson at Elsinore, Calif., July 28, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 40.54 m.p.h.

CLASS C, DIVISION I

Blue Streak IV, driven by Chuck Hall, Lake Elsinore, Calif., July 28, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 37.75 m.p.h.

CLASS C, DIVISION II

Blue Streak, driven by H. G. Ferguson at Lake Elsinore, Calif., July 28, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 40.63 m.p.h.

CLASS D, DIVISION II

Blue Streak, driven by H. G. Ferguson, at Newport Beach, Calif., Oct. 27, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 43.584 m.p.h.

CLASS E, DIVISION I

Ceestepper, driven by L. E. Preston at Red Bank, N. J., August 25, 1929. Built by Penn Yan Boat Works, Johnson engine. Speed 40.227 m.p.h.

TEN MILES

CLASS B, DIVISION I

MADE UNDER NEW 1930 RULES

Flying Cloud II, driven by Harry Arnold, at Lake Merritt, Oakland, Calif., Jan. 1, 1930. Built by Sulmock. Johnson engine. Speed 36.182 m.p.h.

CLASS B, DIVISION II

Crandall Comet, driven by Charles Holt, at Salton Sea, Calif., Dec. 14-15, 1929. Built by Crandall Boat Co. Johnson engine. Speed 38.83 m.p.h.

CLASS C, DIVISION I

Miss Genn III, owned by Robson Cuppils, at White Rock Lake, Dallas, Texas, Sept. 8, 1929. Built by R. Allen Smith. Evinrude engine. Speed 40.089 m.p.h.

CLASS C, DIVISION II

Blue Streak II, owned by L. Baughman, driven by H. G. Ferguson, at San Diego, Calif., Dec. 16, 1928. Built by Holt. Evinrude engine. Speed 38.59 m.p.h. (B)

CLASS D, DIVISION I

I'm Alone, owned by E. Widegren, Oyster Bay, N. Y., Sept. 29, 1929. Built by D. N. Kelley Co. Johnson motor. Speed 47.36 m.p.h.

CLASS D, DIVISION II

Blue Streak IV, owned by Dr. Baughman, at Lake Elsinore, Cal., Sept. 22, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 44.12 m.p.h

CLASS E, DIVISION II

Miss Mystery, owned by L. F. Davids, at Boston, Mass. Oct. 5, 1929. Built by Fay & Bowen. Johnson engine. Speed 40.36 m.p.h.

FIFTEEN MILES

CLASS B, DIVISION I

Crandall Comet, driven by Chas. Adams at Newport Beach, Cal. Oct. 27, 1929 Built by Crandall Boat Co. Johnson engine. Speed 37.383 m.p.h.

CLASS B, DIVISION II

Blue Streak, driven by H. G. Ferguson at Lake Elsinore, California, July 28, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 40.40 m.p.h.

CLASS C, DIVISION I

Vagabond, driven by B. A. Wheeler at Newport Beach, Cal., Oct. 27, 1929. Built by Lake Elsinore Boat Works. Evinrude engine. Speed 35.785 m.p.h.

CLASS C, DIVISION II

Blue Streak IV, driven by H. G. Ferguson, at Lake Elsinore, Cal., July 28, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 40.31 m.p.h.

CLASS D, DIVISION II

Blue Streak, driven by H. G. Ferguson, at Salton Sea, Calif., Dec. 14-15, 1929. Built by Lake Elsinore Boat Works. Johnson engine. Speed 44.92 m.p.h.

YARD AND SHOP

Notes of Interest to Both Owner and Manufacturer

NEWPORT PLANS MAGNIFICENT REGATTA

At the annual meeting of the Narragansett Bay Regatta Association held at Newport, R. I., on February 19, the following officers were elected for 1930:

William H. Vanderbilt, President, Dr. Horace P. Beck, Honorary President, Marion Eppley, Vice President, Robert S. Hayes, Vice President, Edward S. Shriver, Vice President, Charles E. Smith, Secretary, George H. Draper, Treasurer.

The regatta, for all classes of motor boats, will be held in Brenton's Cove, off the Ida Lewis Yacht Club, July 25 and 26, and unusual plans are being made for making it larger and better than ever before. It will be the Fourth Annual Regatta of the Narragansett Bay Association.

The motor boat races at Newport will become part of the greatest yachting season ever held on Narragansett Bay. Four different syndicates are now building defenders for the races for the America's cup which will be held at Newport this summer. The trials of all four defenders and the races to determine the choice of one of them to meet Sir Thomas Lipton's new challenger will all be held at Newport. During the summer Newport Harbor will be visited by the British Fleet and the United States Atlantic Fleet will use Newport as a summer base.

The various committee chairmen are as follows:

General Committee—Dr. Horace P. Beck, Race Committee—Robert S. Hayes, Entertainment Committee—Hon. William F. Whitehouse, Finance Committee—Walter S. Andrews, Information Committee—John E. Wheeler, Publicity Committee—Richard C. Adams, Transportation Committee—James T. O'Connell, Trophy Committee—Edward S. Shriver.

Coast Guardsmen of the Jackson Park, Chicago, Station use a 26-foot stock Chris-Craft in life-saving service

NEW JERSEY BUSY ON WATERWAYS

With 29 important regattas scheduled to take place this summer within the state the motor boat men of New Jersey are busy working for a number of waterway developments for the benefit of local and visiting boat owners. The *Newark Evening News* reports the following activities: In addition to having a hand in the permanent reopening of Manasquan Inlet the State Board of Commerce and Navigation has five other projects to aid yachtsmen in prospect for 1930, according to Victor Gelineau, director. The Manasquan Inlet work will be done by the army engineers, part of the funds to be supplied through the State Board. This job is scheduled to start in the next few months.

The other contemplated work includes deepening Manasquan River and Upper Barnegat Bay, dredging an easterly channel from Mantoloking to Seaside Park, removing the bar and the mouth of the Metedeconk River and dredging upstream, and remedying shoaling in the inland waterway north of Atlantic City and between Ocean City and Cape May.

One of the new Elco 30-foot Veedettes is displayed at their Boston showroom, just opened

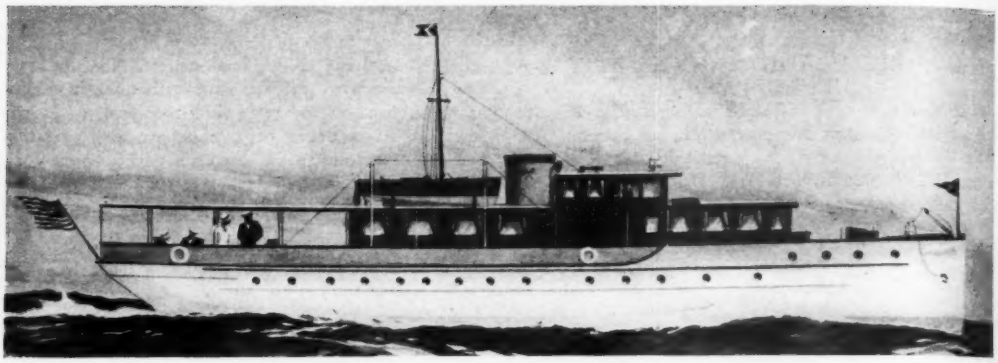
BOATS TO ASSIST PLANES

According to *Aeronautical World Magazine* for February a speed boat service between the Oakland, (Calif.) Airport and the San Francisco Ferry Building was inaugurated January 15 by the Western Water Taxi Company, operated by Joseph McNulty and Neil Fahy. Seven round trips are being made daily connecting with all scheduled Boeing Air Transport, Pacific Air Transport and Western Air Express planes. The eleven-mile trip is made in thirty minutes.

NATIONAL ASSOCIATION OFFICERS RE-ELECTED

At the annual meeting of directors of the National Association of Engine and Boat Manufacturers held February 20 at the Hotel Commodore, New York, the following officers were re-elected to serve for the ensuing year: President—Henry R. Sutphen (Elco Boat Works); 2nd Vice President—Charles A. Criqui (Sterling Engine Co.); 3rd Vice President—John B. Farr, (Kermath Mfg. Co.); Treasurer—Everett E. Palmer (Palmer Brothers); Secretary—Ira Hand.

Mr. Sutphen has been an officer of the Association since its first election on July 16, 1904, at which time



A new 92-footer from designs of the New York Yacht, Launch and Engine Company, now building at their yard. Plans call for a pair of 200 h.p. Winton Diesels

he was elected 3rd vice president. He served in this capacity until March 22nd, 1907, when he was elected 1st vice president, holding that office until his election as president March 1, 1918, in which capacity he has served the industry ever since.

John J. Amory was elected first vice president at this meeting but unfortunately passed on six days later. He was the Association's first president and served from 1904 until 1918, serving as first vice president since that time. Mr. Criqui was elected third vice president on March 22, 1912 which office he held until March 26, 1920 at which time he was elected 2nd vice president. Mr. Farr was elected to his present office of 3rd vice president on February 19, 1929. Mr. Palmer has served as treasurer of the Association since his election to that office on February 26, 1926.

Ira Hand became secretary of the Association in 1910 and since that time has become a dominating factor in almost every branch of the industry and sport. In addition to his work for the National Association he has been extremely active in the affairs of the American Power Boat Association, The Regatta Circuit Riders' Club, which he organized, and others. One of the most important phases of his work is that of manager of the greatest industrial exposition on earth—the Annual National Motor Boat Show.

During the meeting a report was given of the importance and success of the yacht harbor survey undertaken last year for the extension of waterfront facilities for motor boats in many parts of the country. It was voted to continue and expand this work during the present year and to undertake a number of new surveys.

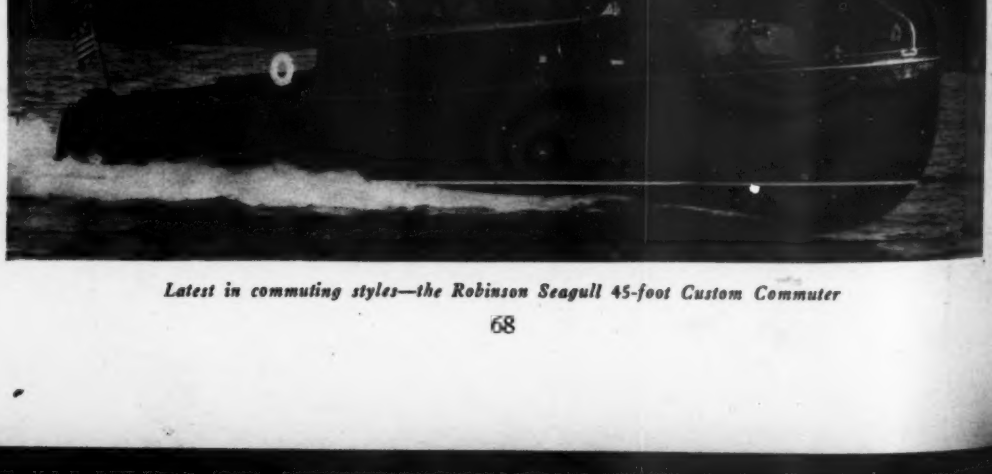
LOS ANGELES SHOW DATE CHANGED

In order to avoid conflict of dates involving the various motor boat shows being held throughout the country during the next couple of months, the officers of the National Association of Engine and Boat Manufacturers have approved the holding of the Los Angeles Motor Boat Show March 29 to April 5 under the auspices of the Civic Regatta Association of Southern California.

The Association has received telegrams stressing the importance of the Pacific Coast Show, April 23 to 30, and urging the cooperation of the Association. In these telegrams were announced important developments in the waterfront situation in San Francisco where the newly created Marina Basin is already completely filled with motor boats and there are 167 applications for berthing space on the waiting list. A petition has been submitted to the San Francisco commissioners for an appropriation of $250,000 to provide 1,000 additional berths for local motor boats as well as for those pleasure craft which visit San Francisco from all points along the Pacific Coast.

COMMUTING COMFORT

An accompanying illustration shows one of the new Robinson Seagull 45-foot Custom Commuters. This model of the Robinson line of cummuters was purchased by both Albert Pack of Chicago and his father-in-law, J. W. Hubbard of the Hubbard Steel Foundry Company of Pittsburgh and New York. These handsome deluxe boats provide the acme of cruising and commuting perfection. Every facility which might contribute to (*Continued on page 156*)



Latest in commuting styles—the Robinson Seagull 45-foot Custom Commuter

STANDARDIZED RUNABOUTS, SEDANS, OPEN BOATS

PRICES—SIZES—EQUIPMENT

NAME OR NUMBER OF MODEL	Price	Length Feet	Beam Feet	Draft Feet	FREEBOARD Forward Feet	FREEBOARD Aft Feet	Headroom Feet	Bottom Round or Vee	Make of Engine	Horse Power	Speed m.p.h.	*STANDARD EQUIPMENT
ACO SEABOAT												
Nopeuset, Mass.												
16-37		15–11½	5–3½	1–9½	2–2	1–5⅜		Round	Gray	37	25	abcdeftuvwxFJLSWXY
16-41		15–11½	5–3½	1–9½	2–2	1–5⅜		Round	Gray	41	25	abcdeftuvwxFJLSWXY
20-72		20–0	6–1	2–1	2–8	1–10		Round	Gray	72	35	abcdeftuvwyxBCFJLQSWXY
20-120		20–0	6–1	2–1	2–8	1–10		Round	Gray	120	40	abcdeftuvwyxBCFJLQSWXY
25-129		25–8	6–7¼	2–4	2–10	1–11½		Round	Gray	120	30	abcdeftuvwxFJLQSWXY
25 Sedan		25–8	6–7¼	2–4	2–10	1–11½		Round	Gray	120	29	abcdeftuvwxFJLQSWXY
ATLAS												
Menominee, Mich.												
19 Runabout		19–0							Optional	60	32	
23 Runabout		23–0							Optional	125	37	
26 Runabout		26–0							Optional	200	45	
30 Runabout		30–0							Optional	200	42	
30 Sedan		30–0							Optional	400	42	
BANFIELD												
Atlantic Highlands, N. J												
22 Runabout	3050	22–0	6–6	1–10	2–8	2–3		Skiff	Optional	106	28	abcdeftuvwxBFMQ
26 Runabout	5500	26–0	7–6	2–0	3–0	2–8		Skiff	Optional	200	38	abcdeftuvwxBFMQ
32 Runabout	6500	32–0	8–6	2–4	4–8	3–6		Skiff	Optional	200	33	abcdeftuvwxBFJKMQ
BROOKS												
Saginaw, Mich.												
Fleetfoot Runabout	*283	22–6	5–8	1–10	1–8	1–11		Vee	Gray	60	24	
16 Vee Runabout	*128 50	16–0	4–5	1–5	1–2½	1–4		Vee	Gray	37	22	
200	*312	26–0	5–8	1–11				Vee	Universal	75	23	
229 Open	*301	30–0	6–8	1–11	4–8	4–3		Round	Universal	75	14	
217 Open	*378	35–0	8–0	2–0	4–9	4–0		Round	Universal	75	12	
	* All m	odels sup	plied kno	ck-down.								
CHASE-EMERSON												
Norwalk, Ohio												
R.Y.	905	16–0	4–6	0–8	1–11	1–9		Vee	Van Blerck	25	25	ewxFLMSW
176		17½	5–5	0–6	2–10	1–10		Vee	Optional		Up to 35	ewxFLMSW
CHRIS-CRAFT												
Algonac, Mich.												
100-20 Runabout	On App.	20–0	6–0	1–7	2–5	1–6		Vee	Chrysler	75	30	abcdeftuvwxBFLMSVWYZ
101-22 Runabout	On App.	22–0	6–0	1–10	2–5	1–6		Vee	Chrysler	75	28	abcdeftuvwyxBFLMQSVWYZ
102-22 Runabout	On App.	22–0	6–0	1–10	2–5	1–6		Vee	Chrysler	125	35	abcdeftuvwyxBFLMQSTVWYZ
103-24 Runabout	On App.	24–0	6–4	1–10	2–10	1–7		Vee	Chrysler	125	34	abcdeftuvwyxBFLMQSVWYZ
104-24 Sedan	On App.	24–0	6–4	1–10	2–8	1–6		Vee	Chrysler	125	33	abcdeftuvwyxBFLMQSVWYZ
105-26 Runabout	On App.	26–0	6–8	2–0	2–10	1–7		Vee	Chrysler	125	30	abcdeftuvwyxBFLMQSVWYZ
106-26 Runabout	On App.	26–0	6–8	2–0	2–10	1–7		Vee		150	35	abcdeftuvwyxBFLMQSVWYZ
107-26 Sedan	On App.	26–0	6–8	2–0	2–10	1–7		Vee		150	34	abcdeftuvwyxBFLMQSVWYZ
108-26 Runabout	On App.	26–0	6–8	2–0	2–10	1–7		Vee	Scrip. or Ker.	200	42	abcdeftuvwyxBFLMQSVWYZ
109-26 Conv. Sedan	On App.	26–0	6–8	2–0	2–10	1–7		Vee	Scrip. or Ker.	200	40	abcdeftuvwyxBFLMQSVWYZ
110-26 Deluxe Sedan	On App.	26–0	6–8	2–0	2–10	1–7		Vee	Scrip. or Ker.	200	40	abcdeftuvwyxBFLMQSVWYZ
111-26 Runabout	On App.	26–0	6–8	2–0	2–10	1–7		Vee	Chris-Craft	225	45	abcdeftuvwyxBFLMQSVWYZ
112-26 Conv. Sedan	On App.	26–0	6–8	2–0	2–10	1–7		Vee	Chris-Craft	225	43	abcdeftuvwyxBFLMQSVWYZ
113-26 Deluxe Sedan	On App.	26–0	6–8	2–0	2–10	1–7		Vee	Chris-Craft	225	43	abcdeftuvwyxBFLMQSVWYZ
114-28 Custom R'b't	On App.	28–0	7–0	2–3	2–10	1–9		Vee	Scrip. or Ker.	200	40	abcdeftuvwyxBFLMQSVWYZ
115-28 Conv. Sedan	On App.	28–0	7–0	2–3	2–10	1–9		Vee	Scrip. or Ker.	200	38	abcdeftuvwyxBFLMQSVWYZ
116-28 All Mah. Sedan	On App.	28–0	7–0	2–3	2–10	1–9		Vee	Scrip. or Ker.	200	38	abcdeftuvwyxBFLMQSVWYZ
117-28 Custom R'b't	On App.	28–0	7–0	2–3	2–10	1–9		Vee	Chris-Craft	225	42	abcdeftuvwyxBFLMQSVWYZ
118-28 Conv. Sedan	On App.	28–0	7–0	2–3	2–10	1–9		Vee	Chris-Craft	225	40	abcdeftuvwyxBFLMQSVWYZ
119-28 All Mah. Sedan	On App.	28–0	7–0	2–3	2–10	1–9		Vee	Chris-Craft	225	40	abcdeftuvwyxBFLMQSVWYZ
120-30 Custom R'b't	On App.	30–0	7–1	2–3	3–1	2–0		Vee	Chris-Craft	225	40	abcdeftuvwyxBFLMQSVWYZ
CRANDALL CRAFT												
Newport Beach, Cal.												
22 Runabout		22–0	6–0	1–8	2–4	2–0		Vee	Optional	85		cdeftvwyxABFSVWXY
15½ Runabout		15–10	4–9	1–5	2–1			Vee	Van Blerk Jr.	25	25	eftwyxFXY
DART												
Toledo, Ohio												
D		18–6	5–6	1–6	2–2	1–6		Vee	Chrysler	72	33	cdeftuvwyxFLMSVWX
A		22–6	6–0	1–10	2–6	1–7		Vee	Chrysler	125	37	abcdeftuvwxyxBCFLMSWXYZ
B		26–0	6–8	2–0	2–8	1–8		Vee	Kermath	200	42	abcdeftuvwxyxBCFLMSWXYZ
C		30–0	7–8	2–2	2–11	1–9		Vee	Optional			abcdeftuvwxyxBCFJKLMSWXYZ
DEBASCO												
Philadelphia, Pa.												
17		17–0	4–11	2–0	2–0	1–8		Vee	Universal	45	30	
18		18–0	5–2	2–0	2–0	1–8		Vee	Universal	85	35	
DEE-WITE												
Detroit, Mich.												
2 DVBI Inboard	585	16–0	4–6	1–6	2–1½	1–5½		Vee			20	abcetuwyFLMQWXY
3 DVB Van Blerck Ins.	985	16–0	4–6	1–6	2–1½	1–5½		Vee	Van Blerck	25	20	abcetuvwyxFLMQSWXY
4 Stan. 440 N	1185	19–0	5–9	1–9	2–6	1–10		Vee	Gray 437	41	30	abcetuvwyxFLMQSWXY
5 Stan. 440	1285	19–0	5–9	1–9	2–6	1–10		Vee	Gray 441	41	30	abcetuvwyxFLMQSWXY
6 Stan. 450	1385	19–0	5–9	1–9	2–6	1 10		Vee	Gray 444	55	28	abcetuvwyxFLMSWXY
7 Stan. 650	1545	19–0	5–9	1–9	2–6	1–10		Vee	Gray 650	55	28	abcetuvwyxBCFLMQSWXY
8 Stan. 670	1645	19–0	5–9	1–9	2–6	1–10		Vee	Gray 672	72	32	abcetuvwyxBCFLMPQSWXY
9 De Luxe 670	1785	19–0	5–9	1–8	2–6	1–10		Vee	Gray 672	72	32	abcdeftuvwyxBCFLMQSWXY
10 De Luxe 8	2285	19–0	5–9	1–8	2–6	1–10		Vee	Gray 8	140	40	abcdeftuvwyxBCFLMQSWXY
DODGE												
3 East 52nd St., N. Y. C												
1	945	16–3	5–3	1–4	1–8	1–2		Vee	Lycoming	40	25	abcdeftuvwyxBFMS
2	2100	21–6	6–4	1–11½	2–3	1–9		Vee	Lycoming	115	35	abcdeftuvwyxBCFMS
3, 4, 10	2500–3900	25–0	6–3¼	1–11	2–5	1–11		Vee	Lycoming	125–165	32–38	abcdeftuvwyxBCFGHQS
5, 6, 11	3700–5300	28–6¾	7–5	2–0½	2–11½	1–9		Vee	Lycoming	165–300	32–45	abcdeftuvwyxBCFGHMQS
DOWN EASTER												
Camden, Maine												
Down Easter	3895	18–0	5–0	1–8	1–8	1–6		Vee	Optional	85	35	abcdeftuvwxyxABCDEFGHIJKLMNOP QRSTUVWXYZ

*See Page 70 for Key to Equipment Symbols

STANDARDIZED RUNABOUTS, SEDANS AND OPEN BOATS

PRICES—SIZES—EQUIPMENT

NAME OR NUMBER OF MODEL	Price	Length Feet	Beam Feet	Draft Feet	FREEBOARD Forward Feet	FREEBOARD Aft Feet	Head-room Feet	Bottom Round or Vee	Make of Engine	Horse Power	Speed m.p.h.	*STANDARD EQUIPMENT
DYER MOTORCRAFT												
East Greenwich, R. I.												
21 Runabout	On App.	21-0	5-9½	1-10	2-11	2-3	.....	Round	Optional	135	38	abcdertvwyzBFJLMSWXYZ
21 Sedan	On App.	21-0	5-9½	1-10	2-11	2-3	.....	Round	Optional	135	35	abcdefvwyzBFGHJLMSWXYZ
21 Yacht Tender	On App.	21-0	5-9½	1-10	2-11	2-3	.....	Round	Optional	.....	.....	abcdefstvwyzBFGHJLMQSWXYZ
26 Runabout*	On App.	26-0	6-6	1-10	3-0	2-3	.....	Round	Optional	200	40	abcdefgvwyzBFJLMSWXYZ
26 Sedan*	On App.	26-0	6-6	1-10	3-0	2-3	.....	Round	Optional	200	40	abcdefvwyzFLMSWXYZ
26 Yacht Tender*	On App.	26-0	6-6	1-10	3-0	2-3	.....	Round	Optional	200	40	abcdeftvwyzFGHLMQSWXYZ
26 Fisherman*	On App.	26-0	6-6	1-10	4-6	2-3	4-0	Round	Optional	200	40	abcdefghopqvwyzFGHIJKLMWXYZ
	* Single or twin screw.											
HACKER												
Mt. Clemens, Mich.												
24 Open	.....	24-0	6-4	1-9	2-6	1-8	.....	Vee	Gray	125	35	abcdefgstuvwxyzBCLMFQSWY
24 Sedan	.....	24-0	6-4	1-9	2-6	1-8	.....	Vee	Gray	125	33	abcdefgstuvwxyzBCFGHKLMQSWY
26 Open	.....	25-11	7-0	1-11	2-7	1-9	.....	Vee	Kermath	200	42	abcdefgstuvwxyzBCFGJKLMQSWY
26 Sedan	.....	25-11	7-0	1-11	2-7	1-9	.....	Vee	Kermath	200	40	abcdefgstuvwxyzBCFGHJKLMQSWXY
30 Sport	.....	30-0	7-0	1-11	2-7	1-9	.....	Vee	Kermath	200	40	abcdefgstuvwxyzABCFJKLMQSWXY
24 Runabout	3150	24-0	6-6	1-10	2-6	1-9	.....	Vee	Gray	125	35	abcdefghstuvwyzBCFMQSXY
26 Runabout	4475	26-0	7-0	2-0	2-8	1-9	.....	Vee	Kermath	200	43	abcdefhstuvwyzBCFMQSXY
30 Runabout	5500	30-0	7-0	2-0	2-8	1-9	.....	Vee	Kermath	200	41	abcdefhstuvwyzBCMFQSXY
38 Sedan	17000	38-0	8-5	2-3	.....	.....	.....	Vee	2-Kermaths	400	42	abcdefhstuvwyzBCFGMQSXY
HADLEY PLANE												
Ozone Park, L. I., N. Y.												
One Step 151-Hydro	3000	17-0	5-0	.....	2-0	1-0	.....	Vee-Step	Miller-4	110	52	tvBC
Three Step 151-Hydro.	3500	18-0	5-2	.....	2-0	1-0	.....	Vee-Step	Miller	110	52	tvBC
For'd Cockpit 151-Hyd.	3650	18-0	5-2	.....	2-4	1-0	.....	Vee-Step	Miller	110	52	atvxBC
JARDINE												
Atlantic City, N. J.												
Baby Skiff	1800	20-6	5-6	1-8	2-6	1-8	.....	Skiff	Gray	60	21	abcdefstuvwyzBCFJKLMQSVWXY
Flying Fish, Jr.	3250	24-0	6-6	2-0	2-10	1-10	.....	Skiff	Gray	125	24	abcdefstuvwyzBCFJKLMQSVWXY
KING SEA SKIFF												
Highlands, N. J.												
26 Open	2125	25-11	7-4	2-0	3-6	2-10	.....	Sea Skiff	Scripps	100	22	abcfrstuvwyzIJKLSVY
28 Open	2325	28-0	8-0	2-0	4-0	3-4	.....	Sea Skiff	Scripps	100	20	abcfstuvwyzIJKLSVY
28 Sedan	3575	28-0	8-0	2-0	4-6	3-4	6-0	Sea Skiff	Scripps	100	20	abcefstuvwxyzBFIJKLQSVWXY
LUDINGTON												
Philadelphia, Pa.												
Sportcar	.....	17-0	5-2	.....	1-8	1-6	.....	Vee	Gray	37	30	abcfsuvwxBCWXY
Sportcar De Luxe	.....	17-0	5-2	.....	1-8	1-6	.....	Vee	Gray	37	30	abcfsuvwxBCFLMQWXY
NORTH STAR												
Holland, Mich.												
Runabout	1850	22-0	6-0	2-0	2-3	1-6	.....	Vee	Continental	62	28	abcefhtvwyzFJLMSWY
OWENS												
Annapolis, Md.												
20 Runabout	980	20-0	6-0	2-0	.....	.....	.....	Vee	Optional	40-110	22-35	abcdefstuvwyzBFJKLQSVWXYZ
SEA-LYON												
532 Lexington Av., N.Y.C.												
30	2675	24-0	6-2	1-10	2-3	1-9	.....	Vee	Chrysler	75	30	abcdefstuvwyzBCFJKLMQSVWXYZ
35	2975	24-0	6-2	1-10	2-3	1-9	.....	Vee	Chrysler	110	35	abcdefstuvwyzBCFJKLMQSVWXYZ
40	4650	28-0	6-7	2-2	2-9	2-0	.....	Vee	Scripps	200	42	abcdefstuvwyzBCFJKLMQSVWXYZ
40	4650	28-0	6-7	2-2	2-9	2-0	.....	Vee	Kermath	200	44	abcdefstuvwyzBCFJKLMQSVWXYZ
45	5950	30-0	7-0	2-1	2-10	1-11	.....	Vee	Sterling	200	45	abcdefstuvwyzBCFJKLMQSVWXYZ
46	6500	30-0	7-0	2-1	2-10	1-11	.....	Vee	Sterling	200	45	abcdefstuvwyzBCFJKLMQSVWXYZ
60	12700	36-0	8-0	2-3	2-11	2-1	.....	V-Hydr	Liberty	425	55	abcdefstuvwyzBCFJKLMSVWXYZ
SEA SLED												
22 Runabout	3195	22-5	5-10½	1-6	2-11½	1-10	.....	Inv. Vee	Optional	110	30	abcdeftvwyzBFJLQSVWX
26 Runabout	4995	25-10½	6-8	1-8	2-3	2-0	.....	Inv. Vee	Kermath	200	42	abcdefyvwyzBCFJKLQSVWX
28 Runabout (Open)	6000	27-5½	6-11	1-10½	2-7	1-9	.....	Inv. Vee	Hall-Scott	200	40	abcdefsvwyzABCFJKLQSVWXY
28 Sedan	8500	27-5½	6-11	1-10½	2-7	1-9	.....	Inv. Vee	Hall-Scott	200	40	abcdefsvwyzABCFJKLQSVWXY
SUNFLOWER												
Lake Tomahawk, Wis.												
Sunflower 23	2200-2800	23-0	6-0	.....	.....	.....	.....	.....	Gray	60-130	.....	
TOPPAN												
Medford, Mass.												
16 Family Skiff	490	16-3	5-6	1-3	3-0	2-6	.....	Dory	Universal	8	11	LSY
18 Family Skiff	815	18-3	6-0	1-4	3-4	2-10	.....	Dory	Universal	15	16	LSY
22 Dory	1075	22-0	6-0	1-6	3-7	3-2	.....	Dory	Universal	15	12	LSWY
18 Swampscott Dory	490	18-0	5-0	1-3	3-0	2-8	.....	Dory	Universal	8	10	LS
VENTNOR												
Atlantic City, N. J.												
26-B	2850	26-0	6-0	1-8	2-8	2-2	.....	Vee	Gray	125	35	abcdefstuvwxyzABCFJKLMQSVWXY
26-A	2400	26-0	6-0	1-8	2-8	2-2	.....	Vee	Gray	72	26	abcdefstuvwxyzABCFJKLMQSVWXY
36	8500	35-6	8-6	2-4	3-8	2-10	.....	Vee	Lee-Liberty	400	50	abcdefstuvwxyzABCFJKLMQSUVWXY
GAR WOOD												
Detroit, Mich.												
30 Runabout	3150	28-0	7-2	2-0	2-11½	2-2¼	.....	Vee	Chrysler	125	32	abcdefstuvwyzBCFJKLMQSVWXYZ
30 Sedan	3650	28-0	7-2	2-0	2-11½	2-2¼	4-2	Vee	Chrysler	125	30	abcdefstuvwyzBCFGHJKLMQSVWXYZ
40 Runabout	4700	28-0	7-2	2-1	2-11½	2-2¼	.....	Vee	Optional	200	42	abcdefstuvwyzBCFJKLMQSVWXYZ
40 Sedan	5300	28-0	7-2	2-1	2-11½	2-2¼	4-2	Vee	Scripps	200	40	abcdefstuvwyzBCFGHIKLMQSVWXYZ
40 Limousine	5550	28-0	7-2	2-1	2-11½	2-2¼	4-2	Vee	Scripps	200	40	abcdefstuvwyzBCFGKLMQSVWXYZ
50 Runabout	8950	33-0	7-2	2-6	3-3	2-5	.....	Vee	Gar Wood	425	50	abcdefstuvwyzABCFIJKLMQSVWXY
50 Limousine	10950	33-0	7-2	2-6	3-3	2-5	4-10	Vee	Gar Wood	425	48	abcdefstuvwyzABCFGIJKLMQSVWXY
55 Runabout	10950	33-0	7-2	2-6	3-3	2-5	.....	Vee	Gar Wood	525	55	abcdefstuvwyzABCFIJKLMQSVWXY
55 Limousine	12950	33-0	7-2	2-6	3-3	2-5	41-0	Vee	Gar Wood	525	53	abcdefstuvwyzABCFGIJKLMQSVWXY

*KEY TO EQUIPMENT SYMBOLS

a—Anchor
b—Anchor Lines
c—Dock Lines
d—Fenders
e—Cushions
f—Life Preservers
g—Mattresses
h—Springs
i—Bedding
j—Blankets
k—Table Linen
l—China
m—Glassware
n—Silverware
o—Galley Equipment
p—Stove
q—Ice Box
r—Radio
s—Bilge Pump
t—Bailers
u—Whistle
v—Fire Extinguisher
w—Running Lights
x—Searchlight
y—Electric Lights
z—Storage Battery
A—Clock
B—Tachometer
C—Motometer
D—Charts
E—Chart Case
F—Windshield
G—Awning or Top
H—Side Curtains
I—Compass
J—Fog Horn
K—Bell
L—Pilot Rules
M—Flags
N—Signal Code Flags
O—Sails
P—Oil Skins
Q—Boat Hook
R—Boarding Ladder
S—Tools
T—Dinghy
U—Table
V—Chairs
W—Floor Covering
X—Upholstery Insets
Y—Locker Space
Z—Chemical Extinguisher

STRUCTURAL AND MECHANICAL SPECIFICATIONS
STANDARDIZED RUNABOUTS, SEDANS AND OPEN BOATS

Name or Number of Model	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Boat Speed	Propeller, Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	State-rooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing	Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revo-lutions	Weight				Fuel	Water	
ACO SEABOATS																							
Neponset, Mass.																							
16-37						Smooth	⅝x⅝	6 2x4 Mah.	1⅛ Mah.	Bronze	Mahogany	Bronze	Gray	37	3⅜x4¼	2900	390	25		¾ Everdur	16		
16-41						Smooth	⅝x⅝	6 2x4 Mah.	1⅛ Mah.	Bronze	Mahogany	Bronze	Gray	41	3⅜x4¼	3000	400	25		¾ Everdur	16		
20-72						Smooth	⅝x⅝	6 2x4½ Mah.	⅞ Mah.	Bronze	Mahogany	Bronze	Gray	72	3⅜x4	3000	576	30		1 Everdur	32		
20-120						Smooth	⅝x⅝	6 2x4½ Mah.	⅞ Mah.	Bronze	Mahogany	Bronze	Gray	120	3⅜x4½	3000	830	40		1⅛ Everdur	32		
26-120						Smooth	¾x¾	6 2x5 Mah.	½ Mah.	Bronze	Mahogany	Bronze	Gray	120	3⅜x4½	3000	830	31		1⅛ Everdur	64		
26 Sedan						Smooth	¾x¾	6 2x5 Mah.	½ Mah.	Bronze	Mahog ny	Bronze	Gray	120	3⅜x4½	3000	830	30		1⅛ Everdur	64		
ATLAS																							
Menominee, Mich.																							
19 Runabout						Smooth	¾x2½	18 1¾x3¾	Mahogany	Brs. & Bze.	Chr. Plate	Bronze	Optional	60				32		1	20		
23 Runabout						Smooth	⅞x3	24 1¾x3¾	Mahogany	Brs. & Bze.	Chr. Plate	Bronze	Optional	125				37		1⅛	30		
26 Runabout						Smooth	⅞x3	18 1¾x3¾	Mahogany	Brs. & Bze.	Chr. Plate	Bronze	Optional	200				45		1¼	50		
30 Runabout						Batten	1⅛x3	24 1¾x4¾	Mahogany	Brs. & Bze.	Chr. Plate	Bronze	Optional	200				42		1¼	70		
30 Sedan						Batten	1⅛x3	24 1¾x4¾	Mahogany	Brs. & Bze.	Chr. Plate	Bronze	Optional	400				42		1¼	70		
BANFIELD																							
Atlantic Highl'ds, N.J.																							
22 Runabout						Lap	⅞x1¾ Oak	9 2 Spruce flat	⅝ Mah.	Cpr. & Brs.	Brass	Bronze	Optional					28		1¼ Monel	60		
26 Runabout						Lap	⅞x1¾ Oak	9 2 Spruce flat	⅝ Mah.	Cpr. & Brs.	Brass	Bronze	Optional					38		1⅜ Monel	80		
32 Runabout						Lap	⅞x1¾ Oak	6 2 Spruce flat	¾ Mah.	Cpr. & Brs.	Brass	Bronze	Optional					33		1⅜ Monel	100		
BROOKS																							
Saginaw W. Side, Mch.																							
Fleetwood Runabout						Batten	Oak	24 1¾x5 Oak	½ Cypress	Galv. or Brs.		Steel or Bze.	Gray	60	3⅜x4	3100	570	24	14x12	1¼ St. or Bze			
16 Runabout						Batten	Oak	20 1½x4 Oak	⅝ Cypress	Galv. or Brs.		Steel or Bze.	Gray	37		2900	290	22	12x13	1 St. or Bze			
290						Batten	Oak		½ Cypress	Galv. or Brs.		Steel or Bze.	Universal	75	3½x4½	3000	635	23	15x12	1½ St. or Bze			
228						Smooth	Oak	6½ 2¾ Oak	⅞ Cypress	Galv. or Brs.		Steel or Bze.	Univ. Reduc.	75	3½x4½		790	14	18x16	1¼ St. or Bze			
217						Smooth	Oak	7½ 3 Oak	⅞ Cypress	Galv. or Brs.		Steel or Bze.	Univ. Reduc.	75	3½x4½		790	12	22x18	1¼ St. or Bze			
CHRIS-CRAFT																							
Algonac, Mich.																							
100-20 Runabout						Batten	⅞x3—24; ⅝x1—6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chrysler	75	3½x4⅛		625	30		1 Monel	31		
101-22 Runabout						Batten	⅞x3—24; ⅝x1—6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chrysler	75	3½x4⅛		625	28		1 Monel	33		
102-22 Runabout						Batten	⅞x3—24; ⅝x1—6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chrysler	125	3⅝x5		930	35		1 Monel	33		
103-24 Runabout						Batten	⅞x3—24; ⅝x1—6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chrysler	125	3⅝x5		930	34		1 Monel	33		
104-24 Sedan						Batten	⅞x3—24; ⅝x1—6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chrysler	125	3⅝x5		930	33		1 Monel	33		
105-26 Runabout						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chrysler	125	3⅝x5		930	30		1 Monel	33		
106-26 Runabout						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze		165				35		1¼ Monel	66		
107-26 Sedan						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze		165				34		1¼ Monel	66		
108-26 Runabout						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	(Scripps	200	5x5¾		1150	42		1¼ Monel	66		
109-26 Conv. Sedan						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	or	200	5x5¾		1292	40		1¼ Monel	66		
110-26 DeLuxeSed.						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Kermath	200	5x5¾		1292	40		1¼ Monel	66		
111-26 Runabout						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chris-Craft	225	5x5¼		1650	45		1¼ Monel	66		
112-26 Conv. Sedan						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chris-Craft	225	5x5¼		1650	43		1¼ Monel	66		
113-26 DeLuxeSed.						Batten	⅛x3-12 & 24; ⅜x1-6	1¾x3¾	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chris-Craft	225	5x5¼		1650	43		1¼ Monel	66		
114-28 Cust'm Run						Batten	⅛x3-12 & 24; ⅜x1-6	2x4	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	(Scripps	200	5x5¾			40		1¼ Monel	80		
115-28 Conv. Sedan						Batten	⅛x3-12 & 24; ⅜x1-6	2x4	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	or	200	5x5¾			38		1¼ Monel	80		
116-28 All-Mahogany Sedan						Batten	⅛x3-12 & 24; ⅜x1-6	2x4	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Kermath	200	5x5¾			38		1¼ Monel	80		
117-28 Cust'm Run.						Batten	⅛x3-12 & 24; ⅜x1-6	2x4	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chris-Craft	225	5x5¼		1650	42		1¼ Monel	80		
118-28 Conv. Sedan						Batten	⅛x3-12 & 24; ⅜x1-6	2x4	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chris-Craft	225	5x5¼		1650	40		1¼ Monel	80		
119-28 All-Mahogany Sedan						Batten	⅛x3-12 & 24; ⅜x1-6	2x4	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chris-Craft	225	5x5¼		1650	40		1¼ Monel	80		
120-30 Cust'm Run.						Batten	⅛x3-12 & 24; ⅜x1-6	2x4	Bot. ⅛; Sides ⅜	Brs. & Bze.	Nick. Silver	Bronze	Chris-Craft	225	5x5¾		1650	40		1¼ Monel	100		
CHASE-EMERSON																							
Norwalk, Ohio																							
R. V.						Batten	Mahogany	19½ 1¼x3 Oak	Mahog.	Copper	Brass	Bronze	Van Blerck Jr.	25	2⅝x3¼	3000	165	25	12x10	¾ Everdur	12		
176						Batten	Spruce	1½x2½ Oak	Mahog.	Copper	Brass	Bronze	Op ional					20-35		1 Everdur	20		
CRANDALL CRAFT																							
Newport Beach, Cal.																							
22 Runabout						Batten	⅞x4 Oak	18 3x1¼&5x1¼Ok	⅝ & ½ Mah.	Brass	Nickel-Pl.	11x16 Brass	Optional	85	3⅜x4	2900	660			1 Bronze	25		
15½ Runabout						Batten	¾x3 Spruce	18 1¼x1¼&3x1Oak	½ & ⅝ Mah.	Brass	Nickel Pl.		Van Blerk Jr.	25	2⅝x3½		165		Van Blerk	Outb'd Dr.	10		

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF STANDARDIZED RUNABOUTS, SEDANS AND OPEN BOATS

Name or Number of Model	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Boat Speed	Propeller Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	State-rooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing	Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revo-lution	Weight				Fuel	Water	
DART																							
Toledo, Ohio																							
D						Smooth	Oak 10 & 24	Oak	Mahogany	Brs. & Cpr.	Nickel Pl.	Bronze	Chrysler	72				33		7/8	25		
A						Smooth	Oak 10 & 24	Oak	Mahogany	Brs. & Cpr.	Chr. Plated	Bronze	Chrysler	125				37		1 Monel	25		
B						Smooth	Oak 10 & 24	Oak	Mahogany	Brs. & Cpr.	Chr. Plated	Bronze	Kermath	200				42		1¼ Monel	60		
C						Smooth	Oak 10 & 24	Oak	Mahogany	Brs. & Cpr.	Chr. Plated	Bronze	Optional							1⅜ Monel	80		
DEBASCO																							
Philadelphia, Pa.																							
17						Batten	⅝ Spruce 20	5 Oak	Dbl. Mah.	Brass	Nickel Silver	Bronze	Universal	45	3¼x4½	3000	425	30	13x13	Bronze	25		
18						Batten	⅝ Spruce 21	5 Oak	Dbl. Mah.	Brass	Nickel Silver	Bronze	Universal	85	3½x4½	3000	635	35		Bronze	25		
DEE-WITE																							
Detroit, Mich.																							
2-16 Inboard						Batten	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze						20	D. W. S.		10		
3-16 Inboard V. B.						Batten	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze	Van Blerck	25	2⅝x3½	2400	275	20	Col. 12-10		10		
4-19 Stan. Inboard						Batten	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze	Gray 437	41	3⅝x4¼	2000	350	20	D. W. S.	1 Bronze	32		
5-19 Stan. Inboard						Batted	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze	Gray 441	41	3⅝x4¼	2000	425	20	D. W. S.	1 Bronze	32		
6-19 Stan. Inboard						Batten	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze	Gray 444	55	3⅞x4¼	2700	425	28	D. W. S.	1 Bronze	32		
7-19 Stan. Inboard						Batten	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze	Gray 650	55	3⅝x3⅞	2700	650	28	D. W. S.	1 Bronze	32		
8-19 Stan. Inboard						Batten	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze	Gray 672	72	3⅝x4	2950	650	32	D. W. S.	1 Bronze	32		
9-19 De Luxe Inb'd						Batten	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze	Gray 672	72	3⅝x4	2950	675	32	D. W. S.	1 Bronze	38		
10-19 De Luxe Inb'd						Batten	Oak 24	Oak	Mahogany	Cpr. & Brs.	18% Ni. Sil.	Bronze	Gray 8	140	3⅝x4⅝	3000	1000	40	D. W. S.	1 Bronze	38		
DODGE																							
New York, N. Y.																							
1						Batten	¾x2-2½ Oak 16	Fir	⅜ Mah.	Bse. & Brs.	Ma. & Ni. Sil.	Bronze	Lycoming	40	3x3¾	3500		25	10x11	¾ Monel	13		
2						Batten	¾-1¼x2½ Oak 18	Fir	⅝ Mah.	Bse. & Brs.	Ma. & Ni. Sil.	Bronze	Lycoming	115	3½x4½	3000		35	14x14	1 Monel	35		
3, 4, 10						Batten	⅞-1¼x2½ Oak 20	Fir	⅝ Mah.	3se. & Brs.	Ma. & Ni. Sil.	Bronze	Lycoming	125	3⅝x4½	3000		32	15x14	1⅛ Monel	42		
														165	3⅞x4⅞	3000		38	17x20				
5, 6, 11						Batted	⅞-1¼x2½ Oak 19	Fir	⅝ Mah.	3se. & Brs.	Bronze	Bronze	Lycoming	165	3⅞x4¾			32	17x20	1¼ Monel	84		
														300	4½x4½	3000		45	19x26				
DOWN EASTER																							
Camden, Me.																							
Down Easter						Batten	⅞x2 Oak	1¾x4 Pine	⅝ Mah.	3rs. & Bse.	Mahogany	Bronze	Gray	40	3⅝x3⅞	2600	540	25	13x13	1 Bronze	25		
													Gray	60	3⅝x4	2600	570	28	13x14	1 Bronze			
													Gray	72	3⅝x4⅝	2600	640	33	13x14	1 Bronze			
													Universal	43	3¼x4½	2500	425	25	13x14	1 Bronze			
													Universal	85	3½x4½	2600	635	35	13x15	1 Bronze			
DYER MOT. CRAFT																							
East Greenwich, R. I.																							
21 Runabout						Smooth	Mahogany	Oak	Dbl. Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional	135				38		Bronze	37		
21 Sedan						Smooth	Mahogany	Oak	Dbl. Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional							Bronze	37		
21 Yacht Tender						Smooth	Mahogany	Oak	Dbl. Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional							Bronze	37		
26 Runabout						Smooth	Mahogany	Oak	Dbl. Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional							Bronze	37		
26 Sedan						Smooth	Mahogany	Oak	Dbl. Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional							Bronze	37		
26 Yacht Tender						Smooth	Mahogany	Oak	Dbl. Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional							Bronze	37		
26 Fisherman		2	Yes	Yes	Yes	Smooth	Mahogany	Oak	Dbl. Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional							Bronze	37	20	
HACKER																							
Mt. Clemens, Mich.																							
27						Batten	⅞x3 Oak 26	1¾x3¾ Oak	Dble Mah	Bse. & Cpr.	Nickel Silver	Bronze	Gray	125	3⅜x4¼	3000	830	35	15x15	Monel 1	35		
26						Batten	⅞x3 Oak 22	1¾x3⅞ Oak	Dble Mah.	Bse. & Cpr.	Nickel Silver	Bronze	Kermath	200	5x6¼	2500	1400	43	18x24	Monel 1½	60		
30						Batten	⅞x3 Oak 25	1⅞x3⅞ Oak	Dble Mah.	Bse. & Cpr.	Nickel Silver	Bronze	Kermath	200	5x6¼	2500	1400	41	18x24	Monel 1½	70		
38		4	1	1		Batten	Oak	Oak	Dble Mah.	Bse. & Cpr.	Chr. Plated	Bronze	2 Kermath	200 ea.	5x6¼	2500	1400	42	18x24	Monel 1½	180		

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF STANDARDIZED RUNABOUTS, SEDANS AND OPEN BOATS

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF STANDARDIZED RUNABOUTS, SEDANS AND OPEN BOATS

NAME OR NUMBER OF MODEL	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Boat Speed	Propeller, Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	State-rooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing	Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revo-lutions	Weight				Fuel	Water	
HADLEY PLANE																							
Ozone Park, L. I.																							
1-Step Hydro						Batten	Oak	12Oak	Mahogany	Brass	Mahogany	Monel	Miller-4	110	151 cu.in.	4700	440	52	13x17	1 Monel	10		
3-Step 151 Hydro						Batten	Oak	12Oak	Mahogany	Brass	Mahogany	Monel	Miller-4	110	151 cu.in.	4700	440	52	13x17	1 Monel	10		
For'd Cockpit Hydr						Batten	Oak	12Oak	Mahogany	Brass	Mahogany	Monel	Miller-4	110	151 cu.in.	4700	440	52	13x17	1 Monel	10		
JARDINE																							
Atlantic City, N. J.																							
Baby Skiff						Smooth Bottom, Lap Sides	⅝x⅝ Oak	Pine	⅝ Cedar	Cpr. & Brs.	Mahogany	Bronze	Gray	60	3⅜x4	2800	570	21	14x12	1⅛ Everdur	24		
Flying Fish, Jr.		2				Smooth Bottom, Lap Sides	⅝x1	Pine	⅝ Cedar	Cpr. & Brs.	Mahogany	Bronze	Gray	125	3⅜x4½	2900	830	24	15x13	1⅛ Everdur	60		
KING SEA SKIFF																							
Highlands, N. J.																							
26-28-30 Open						Lap Strake	1⅛x1⅛ Oak	9Oak	⅝ Cedar	Cpr. & Brs.	Mahogany	Brs. & Bze.	Optional					16-35		Monel	60		
28 Sedan Sp'tsman		2				Lap Strake	1⅛x1⅛ Oak	9 Oak	⅝ Cedar	Cpr. & Brs.	Mahogany	Brs. & Bze.	Optional					16-35		Monel	60		
LUDINGTON																							
Philadelphia, Pa.																							
Sportcar						Batten	Spruce & Oak	18Pine	Mahogany	Brass	Mahogany	Monel	Gray	37	3⅜x4¼	2800	550	30		Bronze			
Sportcar De Luxe						Batten	Spruce & Oak	18Pine	Mahogany	Brass	Mahogany	Monel	Gray	37	3⅜x4¼	2800	550	30		Bronze			
NORTH STAR																							
Holland, Mich.																							
Runabout						Bat. Side, Dbl. Bot.	¾x2½ Oak	12⅝x3⅝ Oak	⅞ Mah.	Brass	Nickel	Bronze	Continental	62	3⅜x4	2600	600	28		1⅛ Monel	30		Delco 6-V.
OWENS																							
Annapolis, Md.																							
28 Runabout						Batten	8 Oak	2x4 Oak	Mahogany	Copper	Mahogany	Bronze	Optional	40–110				22-35			30-50		
SEA-LYON																							
New York, N. Y.																							
30						Smooth	6x24 Oak	1⅛x5⅛ Oak	½ Mah.	Bronze	Nickel Silver	Bronze	Chrysler	75	3½x4½	3200		30	13x12	1⅛ Bronze	33		
35						Smooth	6x24 Oak	1¼x5½ Oak	½ Mah.	Bronze	Nickel Silver	Bronze	Chrysler	110	3⅝x5	3000		35	15x14	1⅛ Bronze	33		
40						Smooth	6x24 Oak	1⅜x6 Oak	½ Mah.	Bronze	Nickel Silver	Bronze	Scripps	200	5x6	2300	1200	42	17x23	1¼ Bronze	53		
40						Smooth	6x24 Oak	1⅜x6 Oak	½ Mah.	Bronze	Nickel Silver	Bronze	Kermath	200	5x6½	2500	1400	44	18x24	1¼ Bronze	53		
45						Smooth	6x24 Oak	1⅜x6 Oak	½ Mah.	Bse. & Cpr.	Nickel Silver	Bronze	Sterling	200	5¼x6	2100	1500	45	18x24	1¼ Bronze	65		
46						Smooth	6x24 Oak	1⅜x6 Oak	½ Mah.	Bse. & Cpr.	Nickel Silver	Bronze	Sterling	200	5¼x6	2100	1500	45	18x24	1¼ Bronze	65		
60						Smooth	6x24 Oak	1⅝x24 Oak	½ Mah.	Bse. & Cpr.	Nickel Silver	Bronze	Liberty	425	5x7	2000	1500	55	24x34	1⅛ Monel	75		
SEA SLED																							
West Mystic, Conn.																							
25						Smooth	15 Oak	1¼x4 Oak	⅜ & ½ Mah.	Cpr. & Brs.	Nickel Silver	Bronze	Hall Scott	200	5x7	1750	1600	38	29x27	2½ Bronze	65		
26						Smooth	15 Oak	1½x4 Oak	Mah. ⅞ Side ⅜ & ⅝ Bot.	Cpr. & Brs.	Nickel Silver	Bronze	Kermath	200	5x5½	2200	1160	40	26x26	2½ Bronze	65		
22						Smooth	15 Oak	1¼x2⅝ Oak	Mah. ⅞ Side ¼ & ½ Bot.	Cpr. & Brs.	Nickel Silver	Bronze	Universal	117	3½x4½	2900	800	30	22x14	1¼ Bronze	35		
22						Smooth	15 Oak	1¼x2⅝ Oak	Mah. ⅞ Side ¼ & ½ Bot.	Cpr. & Brs.	Nickel Silver	Bronze	Chrysler	110	3⅝x5	2900	800	30	22x14	1¼ Bronze	35		
SUNFLOWER																							
Lake Tomahawk, Wis.																							
Sunflower 23							Oak		Mahogany				Gray	60–130									
TOPPAN																							
Medford, Mass.																							
16 Family Skiff						Lap Strake	Oak	Oak	Pine	Galv.	Oak	Oak	Universal	8	4⅜x4½	1200	298	11	13x10	⅞ Bronze	15		
18 Family Skiff						Lap Strake	Oak	Oak	Pine	Galv.	Oak	Oak	Universal	15	2⅝x4	1800	350	16	13x10	⅞ Bronze	15		
22 Family Skiff						Smooth	Oak	Oak	Pine	Galv.	Oak	Galv.	Universal	15	2⅝x4	1500	350	12	13x10	⅞ Bronze	15		
18 SwampscottDory						Lap Strake	Oak	Oak	Pine	Galv.	Oak & Cyp.	Galv.	Universal	8	4⅜x4½	1000	298	10	13x10	⅞ Bronze	12		
VENTNOR																							
Atlantic City, N. J.																							
26-A						Batten	1x1 Oak	92x8 Pine	⅛ Cedar	Brass	Mahogany	Everdur	Gray	72	3½x4½	2900	640	26	14x12	1 Monel	35		
26-B						Batten	1x1 Oak	92x8 Pine	⅛ Cedar	Brass	Mahogany	Everdur	Gray	125	3⅝x4½	3200	830	35	14x14	1 Monel	35		
36						Batten	1¼x1¼ Oak	103x8 Pine	⅛ Cedar	Brs. & Galv.	Mahogany	Everdur	Lee-Liberty	400	5x7	2000	1600	50	22x34	1⅛ Monel	84		

(Continued on page 82)

STANDARDIZED CRUISERS AND EXPRESS CRUISERS

PRICES—SIZES—EQUIPMENT

NAME OR NUMBER OF MODEL	Price	Length Feet	Beam Feet	Draft Feet	FREEBOARD		Head-room Feet	Bottom Round or Vee	Make of Engine	Horse Power	Speed m.p.h.	*STANDARD EQUIPMENT
					Forward Feet	Aft Feet						
A. C. F.												
New York, N. Y.												
30 Cruiser Runabout	6500	30-6	8-8	2-4	4-0	2-10	6-3	Round	Gray	100	22	abcdefghijklmnopqstuvwxyzBCDEFGHIJK LMNOPQRTUVWXYZ
30 Cruiser	4050	30-0	9-6	2-5½	4-11	3-6	6-2	Round	Gray	40	11	abcdefghijklmnopqstuvwxyzBCDEFGHIJKL LMNOPQRTUVWXYZ
38 Sport Cruiser	11500	38-0	9-0	2-6	4-1	2-10	6-4	Round	Gray	2-100	26	abcdefzhijklmnopqstuvwxyzBCDEFGHIJK LMNOPQRTUVWXYZ
40 Cruiser	14800	40-0	11-4	3-2	5-3	2-11	6-4	Round	Hall Scott	100	14	abcdefzhijklmnopqstuvwxyzBCDEFGHIJK LMNOPQRSTUVWXYZ
46 Cruiser		46-0	11-6	3-3	5-4	4-0	6-3	Round	Gray	2-90	18	abcdefghijklmnopqstuvwxyzABCDEFGHI KLMNOPQRSTUVWXYZ
47 Cruiser	21000	47-0	11-9	3-3	6-0	4-0	6-3	Round	Hall Scott	100	13	abcdefzhijklmnopqrstuvwxyzABCDEFGHI JKLMNOPQRSTUVWXYZ
54 Twin Screw Motor Yacht	32500	54-0	12-0	3-6	6-0	4-2	6-4	Round	Hall Scott	2-100	15	abcdefzhijklmnopqrstuvwxyzABCDEFGHI JKLMNOPQRSTUVWXYZ
54 Twin Screw Motor Yacht	36500	54-0	12-0	3-6	6-0	4-2	6-4	Round	Hall Scott	2-175	19	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMNOPQRSTUVWXYZ
68 Twin Screw Motor Yacht	60000	68-0	14-0	3-6	7-4	4-9	6-4	Round	Hall Scott	2-175	18	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMNOPQRSTUVWXYZ
BANFIELD												
Atlantic Highlands, N. J.												
32 Standard—Single Cabin	7250	32-0	8-6	2-6	5-5	3-4	6-0	Skiff	Optional	200	30	abcdefgpqtuvwyzFGHJKLMQSVWXY
32 Standard—Double Cabin	6750	32-0	8-6	2-6	5-5	3-4	6-0	Skiff	Optional	130	22	abcdefgpqtuvwyzFGHJKLMQSVWXY
32 De Luxe—Single Cabin	7950	32-0	8-6	2-6	5-5	3-4	6-0	Skiff	Optional	200	30	abcdefgpqstuvwxyzABFGHIJKLMQSVW XYZ
32 De Luxe—Double Cabin	7450	32-0	8-6	2-6	5-5	3-4	6-0	Skiff	Optional	130	22	abcdefzhijklmnopqrstuvwxyzABCDEFGHI JKLMNOPQRSTUVWXYZ
BLANCHARD												
Seattle, Wash.												
26	2500	26-0	6-7	1-8				Round	Red Wing	50	14	abcdefghpsuvwyzFGIJKLMUVXY
32	4000	32-0	8-6	2-4				Round			12	abcdefghpqsuvwyzBFGHIJKLMQRSUVW XY
36	5750	36-0	9-0	2-6				Round	Red Wing	40-80	13	abcdefghpqsuvwyzBCFGHIJKLMQRSTU VWXY
45	1500	45-0	10-6	2-10				Round	Kermath	150	13	abcdefghpqsuvwxyzABCEFGHIJKLMQRS TUVWXYZ
BROOKS												
Saginaw West Side, Mich.												
291	529	26-0	8-5	2-4	4-2	3-0	5-0	Vee	Gray	50	12	
292	633	30-0	8-8	2-10	5-1	3-2	5-6	Vee	Universal	75	13	
293	792	36-8	9-10	2-10½	5-5	3-6	5-8	Vee	Gray	110	14½	
293	867	40-0	9-10	2-10½	5-5	3-6	5-8	Vee	Gray	110	14½	
242	452	30-0	7-6	2-0	4-10	2-3	5-4	Round	Gray	50	13	
CHRIS-CRAFT												
Algonac, Michigan												
121 Custom Commuter		34-0	8-3	2-2	2-6½	1-10½	5-2	Vee	2 Scripps or 2 Kermath	2-200	40	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMQRSUVWXYZ
122 Commuting Cruiser		38-0	9-8	2-6	4-1½	2-10	6-3	Vee	Chris-Craft	225	30	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMQRSUVWXYZ
123 Chris-Craft Yacht		48-0	11-6	2-8	3-4	2-2½	6-4	Vee	2 Chris-Craft	2-225	30	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMQRSTUVWXYZ
CONSOLIDATED												
Morris Heights, N. Y. City												
55 Cruiser		55-0	11-6	3-3			6-2	Round	Speedway	2-170	20	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMNOPQRSTUVWXYZ
CORSAIR												
Detroit, Mich.												
Crusader 30	6500	30-0	9-3	2-5	4-7	3-1	6-0	Round	Chrysler	120	18	abcdefghpqstuvwyzBEFGHIJKLMQRSUV WXYZ
Crusader 36	11000	36-0	9-10	2-8	5-5	3-4	6-2½	Round	Scripps	200	24	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMQRSUVWXYZ
Crusader De Luxe 36		36-0	9-10	2-8	3-5	3-4	6-2½	Round	Scripps	200	24	abcdefghijklmnopqstuvwxyzABCDEFGHIJ KLMNOQRSUVWXYZ
DAUNTLESS												
New York, N. Y.												
		42-0	10-5	3-0			6-3	Round	Lathrop	100	13¼	bcdefghiiklmnopqstuvwxyzBCEFGHIJKL MNOQRSTUVWXYZ
DAWN												
Clason Point, N. Y. City												
45 Cruiser	16900	45-6	11-10	3-0	6-0	3-4	6-2	Round	2-Lathrop	70 each	13-15	abcdefghpqsuvwxyzCEFGHIJKLMQRST UVWXYZ
48 De Luxe	22000	48-6	11-10	3-4	6-0	3-4	6-2	Round	2 Lathrop	70 each	13-15	abcdefghpqsuvwxyzBCEFGHIJKLMQRST UVWXYZ
48 Express	23800	48-6	11-10	3-4	6-0	3-4	6-2	Round	2 Sterling	200 each	20	abcdefghpqruvwxyzBCEFGHIJKLMNOPQ RSTUVWXYZ
DODGE												
New York, N. Y.												
45 Express	27500	45-0	11-0	2-8	5-0	3-6		Vee	2 Lycoming	300 each	35	abcdefghijklmnopqrstuvwxyzABCFGHIJK LMQRSUVWXYZ
DYER MOTORCRAFT												
East Greenwich, R. I.												
38 Speed Sedan	13900-15000	38-0	8-7	2-4	4-6	3-5	6-2	Round	Optional	200	30	abcdefghijkopqstuvwxyzBCGHIJKLMQRS UWXYZ
38 Speed Sedan (Twin Scr.)	16750-18000	38-0	8-7	2-5	4-5	3-4	6-2	Round	Optional	400	41	abcdefghijkopqstuvwxyzBCFGHIJKLMQR SUWXYZ
38 Express Commuter (Twin Screw)	19500 up	38-0	10-0	2-9	5-3	3-8	6-2	Round	Optional	400	30	abcdefghijkopqstuvwxyzBCFGHIJKLMQR STUWXYZ
42 Express Commuter (Twin Screw	23500-25000	42-0	10-0	2-9	5-3	3-8	6-2	Round	Optional	400	30	abcdefghijkopqstuvwxyzABCFGHIJKLM QRSTUWXYZ

*See Page 77 for Key to Equipment Symbols

STANDARDIZED CRUISERS AND EXPRESS CRUISERS

PRICES—SIZES—EQUIPMENT

NAME OR NUMBER OF MODEL	Price	Length Feet	Beam Feet	Draft Feet	FREEBOARD		Head-room Feet	Bottom Round or Vee	Make of Engine	Horse Power	Speed m.p.h.	*STANDARD EQUIPMENT
					Forward Feet	Aft Feet						
ELCO												
Bayonne, N. J.												
Twenty-Six		26-9	9-2	2-4	3-9	2-11	5-9	Round	Elco-Gray	45	11	abcdefghpqsuvwxyzFGHIJKLMQRSUWXY
Vestelle		30-11	8-6	2-4	4-9	3-0	6-1	Vee	Elco-Buda	80	20	abcdefghpqsuvwxyzBCFGHIJKLMQRSU WXY
Cruisette		35-0	10-3	2-9	4-8	3-6	6-1	Round	Elco-Buda	125	16	abcdefghpqsuvwxyzBCFGHIJKLMQRSU WXY
Thirty-Eight		38-0	10-5	2-10	5-3	3-4	6-1	Round	Elco-F62	145	15	abcdefghpqsuvwxyzABCFGHIJKLMQRS UWXY
Forty-Two		42-9	11-11	3-0	6-0	3-9	6-2	Round	Elco-F62	145	13	abcdefghpqsuvwxyzBCEFGHIJKLMQRS TUVWXY
Fifty		50-4	12-9	3-0	6-8	4-0	6-3	Round	Elco-F62	145	15	abcdefghpqsuvwxyzBCEFGHIJKLMQRS TUVWXY
FAIRFORM FLYER												
Jacksonville, Fla.												
45 Cruiser	17500	45-0	11-0	2-8	6-6	4-0	6-6	Vee	2 Kermath	400	25	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMNOQRSTUVWXYZ
54 Cruiser	26000	54-0	11-4	2-8	6-6	4-0	6-6	Vee	2 Sterling	580	30	abcdefghijklmnopqrstuvwxyzABCDEFGHI JKLMNOQRSTUVWXYZ
FLEETWING												
New York, N. Y.												
Jr.		28-0	8-3	2-6			6-0	Round		75	14	abcdefghpqsuvwyzFGHIJKLMQUVXY
Sportster		28-0	8-3	2-6			6-0	Round	Fleetwing	175	28	abcdefghpqsuvwxyzBCFGHIJKLMQSUV WXY
42		42-0	11-6	3-6			6-2	Round	Fleetwing	175	18	abcdefghpqrsuvwxyzABCEFGHIJKLMQR STUVWXYZ
50		50-0	12-6	3-9			6-3	Round	2 Fleetwings	350	22	abcdefghiqsuvwxyzBCEFGHIJKLMQRST UVWXYZ
56		56-0	10-1	2-8			6-3	Round	2 Libertys	800	38	abcdefghopqsuvwxyzBCEFGHIJKLMQRS TUVWXYZ
62		62-0	13-6	3-9			6-4	Round	2 Fleetwings	350	15	abcdefghpqrsuvwxyzABCEFGHIJKLMQR STUVWXY
75		75-0	15-0	3-10			6-4	Round	Diesels	600	20	abcdefghpqrsuvwxyzABCEFGHIJKLM QRSTUVWXYZ
GRANDY												
Seattle, Wash.												
25	2885	28-0	8-6					Round	Gray	60	8	
30	4000	30-0	9-4					Round	Gray	72	11	
36	4950	36-0	9-9					Round	Gray	90	13	
40	8450	40-0	10-6					Round	Hall-Scott	100	16	
GREENPORT												
Greenport, N. Y.												
40 De Luxe	12950	40-0	10-6	3-6	5-6	3-2	6-2	Round	Buda	115	12	abcdefghijpqsuvwxyzBCFGHIJKLMQRST UVWXY
40 Standard	10875	40-0	10-6	3-6	5-6	3-3	6-2	Round	Buda	115	12	abcdefghipqsuvwxyzBFGHIJKLMQRSTU VWXY
HACKER CRAFT												
Mount Clemens, Mich.												
38 Commuter	17000	38-0	8-5	2-3	3-6	2-6	6-0	Vee	2-Kermaths	400	42	abcdefghijklmnopqstuvwxyzABCDEFGHIJKLMQ SUVWXYZ
HUMPHREYS SEA CRUISER												
New York, N. Y.												
40 Pilot	14250	40-0	10-6	3-0	5-6	3-4	6-2	Round	Hill	48	12	abcdefghijklmnopqstuvwxyzABCDEFGHIJ KLMQRSTUVWXYZ
45 Navigator	19450	45-0	11-0	3-0	5-8	3-6	6-2	Round	Hill	75	13	abcdefghijklmnopqstuvwxyzABCDEFGHIJ KLMQRSTUVWXYZ
50 Challenger	28000	50-0	12-6	3-6	6-0	3-9	6-3	Round	Optional	100	14	abcdefghijklmnopqstuvwxyzABCDEFGHIJ KLMQRSTUVWXYZ
55 Privateer	32000	55-0	12-6	3-6	6-0	4-0	6-3	Round	Optional	2-100	15	abcdefghijklmnopqstuvwxyzABCDEFGHIJ KLMQRSTUVWXYZ
60 Explorer	46400	60-0	13-6	4-0	6-3	4-1	6-4	Round	Optional	2-100	14	abcdefghijklmnopqstuvwxyzABCDEFGHIJ KLMNQRSTUVWXYZ
65 Destroyer	51150	65-0	13-6	4-0	6-8	4-3	6-4	Round	Optional	300	17	abcdefghijklmnopqstuvwxyzABCDEFGHIJ KLMNQRSTUVWXYZ
70 Discoverer	69600	70-0	14-6	4-6	7-0	4-6	6-5	Round	Optional	2-150	14	abcdefghiklmnopqstuvwxyzABCDEFGHIJ KLMNQRSTUVWXYZ
75 Commander	85500	75-0	15-0	4-6	7-3	5-0	6-6	Round	Optional	2-200	16	abcdefghiklmnopqstuvwxyzABCDEFGHIJ KLMNQRSTUVWXYZ
HOLL-CRAFT												
Boston, Mass.												
56 Steel Cruiser	37500	56-0	13-0	4-0	5-6	3-2	6-8	Vee	2-M.A.N. Diesel	70 ea.	16	abcdefghijklmnopqrsuvwxyzABCDEFGIJK LMNQRSTUVWXYZ
EDWARD FELL JARDINE												
Atlantic City, N. J.												
Flying Fish	6000	30-0	7-6	2-4	3-2	2-4	6-0	Skiff	Sterling	200	30	abcdefgstuvwxyzBCFGHIJKLQSVWXYZ
Jardine 35	11000	35-0	8-9	2-9	6-0	2-8	6-0	Skiff	Sterling	150	20	abcdefghijklmnopqrstuvwxyzABCDEFGH IJKLMQRSUVWXYZ
KING SEA SKIFF												
Highlands, N. J.												
K. D. Sportsman 28	3075	28-0	8-0	2-0	4-6	3-4	5-6	Sea Skiff	Scripps	100	20	abcefsuvwyzBJKLQSVXY
28 De Luxe	3850	28-0	8-0	2-0	4-6	3-4	5-10	Sea Skiff	Scripps	100	18	abcdefzopqsuvwxyzBFGHIJKLQSUVWXY
30 De Luxe	5250	30-0	8-6	2-0	4-10	3-8	6-0	Sea Skiff	Scripps	100	16	abcdefzopqsuvwxyzBFGHIJKLQSUVWXY
LIGGETT												
Wyandotte, Mich.												
35 Single Cabin Cruiser	6600	34-10	9-6	2-8	4-10	2-10	6-2	Round	Kerm.—Choice	200	23	abcdefghpqstvwyzBCFGHIJKLMQRSUV WXY
35 Double Cabin Cruiser	7200	34-10	9-6	2-8	4-10	2-10	6-2	Round	Kerm.—Choice	200	23	abcdefghpqstvwyzBCFGHIJKLMQRSTUV WXY
35 Sport Cruiser	7600	34-10	9-6	2-8	4-10	2-10	6-2	Round	Kerm.—Choice	200	23	abcdefghpqstvwyzBCFGHIJKLMQRSTUV WXY
35 Double Cabin, Open Bridge and Aft Windshield	8100	34-10	9-6	2-8	4-10	2-10	6-2	Round	Kerm.—Choice	200	23	abcdefghpqstvwyzBCFGHIJKLMQRSTUV WXY
35 Dble. Cab., Encl. Bridge	8400	34-10	9-6	2-8	4-10	2-10	6-2	Round	Kerm.—Choice	150	20	abcdefghpqstvwyzBCFGHIJKLMQRSTUV WXY
40 Double Cabin Cruiser	14100	40-0	10-8	3-0	5-9	3-0	6-2	Vee	Kerm.—Choice	200	21	abcdefghpqstvwxyzBCEFGHIJKLMQRST UVWXY
47 Double Cabin, Enclosed Deckhouse	17300	47-0	11-6	3-0	5-9	3-2	6-2	Round	Kerm.—Choice	200	18	abcdefghpqstvwxyzBCEFGHIJKLMQRST UVWXYZ

*See Page 77 for Key to Equipment Symbols

STANDARDIZED CRUISERS AND EXPRESS CRUISERS
PRICES—SIZES—EQUIPMENT

NAME OR NUMBER OF MODEL	Price	Length Feet	Beam Feet	Draft Feet	FREEBOARD		Headroom Feet	Bottom Round or Vee	Make of Engine	Horse Power	Speed m.p.h.	*STANDARD EQUIPMENT
					Forward Feet	Aft Feet						
MATTHEWS												
Port Clinton, Ohio												
38 Single Cabin	6850	38-6	11-0	3-0	5-8	3-2	6-2	Round	Kermath	125	17	abcdefghpqstuvwyzBCFGHJKLMOSUVW XYZ
38 Double Cabin (Open Bridge)	8450	38-6	11-0	3-0	5-8	3-2	6-2	Round	Kermath	125	16	abcdefghpqstuvwyzBCFGHJKLMSUVW XYZ
38 Double Cabin (Enclosed Bridge)	9400	38-6	11-0	3-0	5-8	3-2	6-2	Round	Kermath	125	15	
38 Day Cruiser (Open Bridge)	7900	38-6	11-0	3-0	5-8	3-2	6-2	Round	Kermath	125	16	abcdefghpqstuvwyzBCFGHJKLMOSUVW XYZ
38 Day Cruiser (Enclosed Bridge)	8850	38-6	11-0	3-0	5-8	3-2	6-2	Round	Kermath	125	15	
38 Sport Cruiser	7550	38-6	11-0	3-0	5-8	3-2	6-2	Round	Kermath	150	19	abcdefghpqstuvwyzBCFGHJKLMSUVW XYZ
38 DeLuxe, Double-Cabin Sport	11000	38-6	11-0	3-0	5-8	3-2	6-2	Round	Kermath	150	18	abcdefghpqstuvwyzBCFGHIJKLMSUVW XYZ
46 Single Cabin	12200	46-6	11-0	3-2	5-10	3-4	6-2	Round	Kermath	150	17	abcdefghpqstuvwyzBCEFGHJKLMOSUV WXYZ
46 Double Cabin (Open Bridge)	13500	46-6	11-0	3-2	5-10	3-4	6-2	Round	Kermath	150	17	abcdefghpqstuvwyzBCEFGHJKLMSUVW XYZ
46 Double Cabin (Enclosed Bridge)	14500	46-6	11-0	3-2	5-10	3-4	6-2	Round	Kermath	150	17	
46 Sport Cruiser	12800	46-6	11-0	3-2	5-10	3-4	6-2	Round	Kermath	150	18	abcdefghpqstuvwyzBCEFGHJKLMSUV WXYZ
46 DeLuxe Double Cabin Sport	15500	46-6	11-0	3-2	5-10	3-4	6-2	Round	Kermath	150	17	abcdefghpqstuvwyzBCDEFGHIJKLMSU VWXYZ
N. Y. YACHT, LAUNCH & ENGINE CO., N. Y. City												
77 Cruiser	69000	77-0	16-0	3-9	9-0	5-0	6-3	Round	20th Century	100	14	abcdefghipqsuvwxyzBCEFGHIJKLMQRST UVXYZ
OWENS												
Annapolis, Md.												
26 Cruiser	1680 up	26-0	7-2	2-0	3-7	2-6	5-9	Vee	Optional	40-110	14-24	abcdefghopqstuvwyzFGIJKLQSUVWXYZ
REABER												
Seattle, Wash.												
Speedcruiser	1850	22-0	6-10	2-0	....	.....	5-1	.....	Gray	30	15	
RICHARDSON CRUISABOUT, N. Tonawanda, N. Y.												
29 Single Cabin	3585	29-0	8-10	2-6	4-4	3-0	5-11	Round	Gray	60	13	abcefghpqsuvwyzFGHIJKLMQSUWXY
29 Double Cabin	4185	29-0	8-10	2-6	4-4	3-0	5-11	Round	Gray	60	13	abcefghpqsuvwyzFGHIJKLMQSUWXY
RICKRUISER												
New York, N. Y.												
30	4850	30-0	8-6	2-3	.....	.....	6-0	Round	Optional	110	19	abcefgmopqsuvwyzBCEFGHIJLQSUWXYZ
ROBINSON SEA GULL												
Standard Sedan	14500	39-0	8-6	2-4	4-0	2-8	6-3	Vee	Optional	200	32	abcdefghijklmnopqrstuvwxyzABCFGHIJK LMNPQRSUVWXYZ
Ford Cockpit Sedan	14750	39-0	8-6	2-4	4-0	2-8	6-3	Vee	Optional	200	32	abcdefghijklmnopqrstuvwxyzABCFGHIJK LMNPQRSUVWXYZ
40 Cruiser	14500	40-0	9-6	2-6	5-0	3-0	6-6	Vee	Optional	200	30	abcdefghijklmnopqrstuvwxyzABCFGHIJK LMNPQRSUVWXYZ
40 Twin Screw	16500	40-0	9-6	2-6	5-0	3-0	6-6	Vee	Scripps	150	32	abcdefghijklmnopqrstuvwxyzABCFGHIJK LMNPQRSUVWXYZ
45 Twin Scr. Single Cabin	25000	45-0	10-0	2-8	5-0	3-0	6-6	Vee	Hall Scotts	240	36	abcdefghijklmnopqrstuvwxyzABCFGHIJK LMNPQRSUVWXYZ
45 Twin Scr. Dble. Cabin	30000	45-0	10-0	2-8	5-0	3-0	6-6	Vee	Hall Scotts	240	35	abcdefghijklmnopqrstuvwxyzABCFGHIJL MNPQRSUVWXYZ
SEA BRIGHT DORY WKS												
Long Branch, N. J.												
26 Sea Skiff Cruiser	.....	26-0	9-0	2-0	3-8	2-8	5-0	Skiff	Buda	80	21	abcefghopqstuvwyzBEFGJKLQSUXY
30 Sea Skiff Cruiser	.....	30-0	10-3	2-6	4-4	3-1	6-0	Skiff	Sterling	195	22	abcefghopqstuvwyzBFGJKLQSUXY
36 Sea Skiff Cruiser	.....	36-0	12-6	2-9	4-6	3-3	6-2	Skiff	Sterling	150	18	abcefghopqstuvwyzBEFJKLQRSUXY
SEVEN SEAS CRUISER												
Mystic, Conn.												
Seven Seas Cruiser	.....	50-0	11-4	3-0	6-6	4-6	6-3	Round	2 Sterlings	180ea	23	abcdefghijklmnopqstuvwxyzABCEFGHIJK LQRSTUVWXYZ
STAPLES JOHNSTON												
Biddeford, Me.												
Marblehead	5950	34-0	9-6	2-10	4-6	3-4	6-2	Round	Kermath	100	17	abcefghpqsuvwyzFGIJKLQRSUVWXYZ
STEPHENS												
Stockton, Cal.												
34	6500	34-3	9-0	2-6	4-9	2-9	6-0	Round	Scripps	80	16	abcdefghijk'mnoqs'uvwxyzABCFGHIJKL MQRSTUVWXYZ
43	13500	42-11	10-6	3-0	5-4	3-4	6-2	Round	2-Scripps	160	18	abcdefghijklmnopqstuvwxyzABCFGHIJK LMQRSTUVWXYZ
47	18250	47-0	10-10	3-2	5-4	3-4	6-3	Round	2-Scripps	400	30	abcdefghijklmnopqstuvwxyzABCFGHIJK LMQRSTUVWXYZ
50	19600	49-11	11-0	3-6	5-6	3-6	6-4	Round	2-Scripps	400	25	abcdefghijklmnopqstuvwxyzABCFGHIJK LMQRSTUVWXYZ
TOMS RIV. BT. CORP, INC.												
Toms River, N. J.												
Viking 24	2250	24-0	7-6	22-0	3-0	2-2	4-10	Round	Red Wing	50	14	abcefgsuvwyzFGJKLMSY
Viking 28	2800	26-0	8-0	24-0	4-0	3-6	5-10	Round	Gray	60	18	abcefgsuvwyzFGJKLMSY
Viking 30	3500	30-0	8-6	32-0	4-6	3-10	6-2	Round	Gray	72	18	abcefgsuvwyzFGJKLMSY
TOPPAN												
Medford, Mass.												
30 Sea Crest Exp. Cruiser	4950	30-0	7-6	2-0	4-6	2-6	6-2	Vee	Optional	100	20	abefgoqsuvwyzFGJKLSWXY
32½ Lisnroe Exp. Cruiser	7250-8250	32-6	8-6	2-6	5-0	3-0	6-2	Vee	Optional	200	35	abefghoqsuvwyzBFGJKLRSWXY
42 Lisnroe Express Cruiser	18000-22000	42-0	11-3	3-0	6-0	4-0	6-4	Vee	Optional	500	40	abefghoqsuvwyzBFGJKLRSWXY
VINYARD												
Milford, Del.												
Coastwise 50	21000	50-8	12-6	4-0	6-9	4-0	6-6	Round	Sterling	300	14½	abcdefghijklmnopqsuvwxyzABCEGHIJKL MQRSTUVWXYZ
Gulf Stream 55	27500	55-0	12-6	4-0	6-9	4-0	6-6	Round	Sterling	300	14½	abcdefghijklmnopqsuvwxyzABCEGHIJKL MQRSTUVWXYZ

*See Page 77 for Key to Equipment Symbols

STANDARDIZED CRUISERS AND EXPRESS CRUISERS

PRICES—SIZES—EQUIPMENT

NAME OR NUMBER OF MODEL	Price	Length Feet	Beam Feet	Draft Feet	FREEBOARD Forward Feet	FREEBOARD Aft Feet	Head-room Feet	Bottom Round or Vee	Make of Engine	Horse Power	Speed m.p.h.	*STANDARD EQUIPMENT
WHEELER PLAYMATE												
Brooklyn, N. Y.												
De Luxe Junior Playmate	3650	26-0	8-2	2-2	3-2	2-6	5-10	Semi-V	Chrysler	110	24	abcdefghpqsuvwyzBCFGLMSUVWXY
Standard Junior Playmate	2875	26-0	8-2	2-2	3-2	2-6	5-10	Semi-V	Gray	72	14	abcdefghpqsuvwyzBCFGLMSUVWXY
Short Cabin Jr. Playmate	2500	26-0	8-2	2-2	3-2	2-6	5-7	Semi-V	Chrysler	70	14	abcdefghqpsuvwyzBCFGJKLMSVWXY
Standard Playmate	4500	29-0	9-3	2-4	3-5	2-8	6-1	Semi-V	Chrysler	110	20	abcdefghpqsuvwyzBCFGHJKLMQRSUVW XY
Short Cabin Playmate	4000	29-0	9-3	2-4	3-5	2-8	6-0	Semi-V	Chrysler	110	21	abcdefghpqsuvwyzBCFGHJKLMQRSUVW XY
Standard Super Playmate	6850	33-0	9-6	2-6	3-8	2-10	6-2	Semi-V	Scripps	150	20	abcdefghpqsuvwyzBCEFGHIJKLMQRSU VWXYZ
Dble. Cab. Super Playmate	6700	33-0	9-6	2-6	3-8	2-10	6-2	Semi-V	Chrysler	110	17	abcdefghpqsuvwyzBCEFGHIJKLMQRSU VWXYZ
Sp. Fisherman Sc. Playmate	6850	33-0	9-6	2-6	3-8	2-10	6-2	Semi-V	Kermath	200	26	abcdefghpqsuvwyzBCEFGHIJKLMQRSU VWXYZ
Standard Playmate Cruiser	7950	36-0	10-0	2-8	4-0	3-0	6-3	Semi-V	Sterling	200	21	bacdefghpqsuvwyzABCDEFGHIJKLMQR SUVWXYZ
Dble. Cab. Playmate Cruiser	8850	36-0	10-0	2-8	4-0	3-0	6-3	Semi-V	Sterling	200	20	abcdefghpqsuvwyzABCDEFGHIJKLMQR SUVWXYZ
Com. Sedan Playmate Cr.	8750	36-0	10-0	2-8	4-0	3-0	6-3	Semi-V	Sterling	200	20	abcdefghpqsuvwyzABCDEFGHIJKLMQR SUVWXYZ
Single Cab. Playmate Sen.	9750	40-0	11-0	2-10	4-4	3-2	6-3¼	Semi-V	Sterling	200	18	abcdefghpqsuvwyzABCDEFGHIJKLMQR SUVWXYZ
Dble. Cabin Playmate Sen.	11250	40-0	11-0	2-10	4-4	3-2	6-3¼	Semi-V	Chrysler	2-110	22	abcdefghpqsuvwyzABCDEFGHIJKLMQR SUVWXYZ
Com. Sedan Playmate Senior	10500	40-0	11-0	2-10	4-4	3-2	6-3¼	Semi-V	Sterling	200	18	abcdefghpqsuvwyzABCDEFGHIJk..MQR SUVWXYZ
Dble. Cab. Master Playmate	19500	47-0	12-0	3-4	4-11	3-9	6-4	Vee	Sterling	2-200	24	abcdefghpqsuvwyzABCDEFGHIJKLMNQ RSTUVWXYZ
Com. Sed. Master Playmate	19950	47-0	12-0	3-4	4-11	3-9	6-4	Vee	Sterling	2-200	24	abcdefghpqsuvwyzABCDEFGHIJKLMNQ RSTUVWXYZ
WHITNEY												
East Hartford, Conn.												
35	8900	35-5	10-0	2-9	5-2	3-2	6-3	Vee	Sterling	200	20	abcdefhpqstuvwxyzBFGHIJKLMQRSU WXY
41	.....	41-0	10-0	2-9	5-2	3-3	6-8	Vee	2-Chrysler	200	20	abcdefgpqstuvwxyzBCFGHIJKLMQRSUV WXY
WILEY												
Oxford, Md.												
41 Bridge Deck	10250	41-0	11-0	2-9	6-0	3-6	6-4	Vee	Optional	150	16	abcdefghpqsuvwxyzCEFGHIJKLMNQRS UVWXYZ
50 Cruiser	14000	50-0	13-0	3-0	6-2	3-9	6-4	Round	Optional	150	11	abcdefghpqsuvwxyzCEFGHIJKLMNQRS UVWXYZ
GAR WOOD												
Detroit, Mich.												
Express Cruiser	45.000 up	50-0	11-3	3-0	6-0	5-0	6-5	Vee	Gar Wood	425-525	42-47	abcdefhpqstuvwxyzBCFGIKLMQSTUVWX YZ

***KEY TO EQUIPMENT SYMBOLS**

a—Anchor
b—Anchor Lines
c—Dock Lines
d—Fenders
e—Cushions
f—Life Preservers
g—Mattresses
h—Springs
i—Bedding
j—Blankets
k—Table Linen
l—China
m—Glassware
n—Silverware
o—Galley Equipment
p—Stove
q—Ice Box
r—Radio
s—Bilge Pump
t—Bailers
u—Whistle
v—Fire Extinguisher
w—Running Lights
x—Searchlight
y—Electric Lights
z—Storage Battery
A—Clock
B—Tachometer
C—Motometer
D—Charts
E—Chart Case
F—Windshield
G—Awning or Top
H—Side Curtains
I—Compass
J—Fog Horn
K—Bell
L—Pilot Rules
M—Flags
N—Signal Code Flags
O—Sails
P—Oil Skins
Q—Boat Hook
R—Boarding Ladder
S—Tools
T—Dinghy
U—Table
V—Chairs
W—Floor Covering
X—Upholstery Inside
Y—Locker Space
Z—Chemical Extinguisher

CHICAGO BOAT MART FORMALLY OPENED

A formal spring opening of the permanent Motor Boat Mart on Navy Pier in Chicago is planned by Manager Hubbard H. Erickson to begin Saturday March 15.

Along last fall when Manager Erickson secured a long term lease from the City of Chicago on the entire second floor of the great north wing of Navy Pier, the Motor Boat Mart was operating on Diversey Parkway. It required some months to remodel the arrangement plan of the pier, finish it for an exposition hall, install heating and lighting arrangements and remove to it a large line of exhibits. While the Motor Boat Mart has been open to the public for some time, and incidentally is attracting four times as many visitors as did the location on Diversey Parkway, it has never celebrated the new home on Navy Pier with a formal opening. Complete in every detail now, this permanent Motor Boat Mart is to have its official opening. The huge room is profusely decorated and presents a most attractive appearance and doubtless will draw largely augmented crowds for this proposed official spring opening.

It is in connection with the permanent Motor Boat Mart, with an addition of 1600 feet in length to the great show room, that the officially sanctioned Chicago National Boat Show is to be held, April 25 to May 3. The work of preparing this enormous show space is already in progress.

One of the novelty features which will go with both the permanent Motor Boat Mart and the Chicago National Boat show will be a water taxi service from several of the boat landings on the Chicago River along Wacker Drive. This service will be maintained by two or three different companies. They are equipped with up-to-date, high-powered runabouts, types of which will be on exhibition, and they will carry visitors to and from the pier at modest rates. This novel service will permit the visitor to have an unusual view of Chicago's waterfront and sky line.

RED BANK YACHT CLUB BUYS NEW HOME

The Red Bank Yacht Club announces the purchase of the Kennedy property on East Front Street, Red Bank, New Jersey, for their new clubhouse. The property has a depth of 389 feet running from E. Front Street to the river with a street frontage of 58 feet and a river frontage of slightly less. There is a 12-room house on the property which is to be converted into a modern clubhouse with ballroom, grill, clubrooms, guest rooms, etc. A bulkhead is to be erected and a long dock built into the river.

The Red Bank Yacht Club was founded on Sept. 19, 1896, by the following men who were the charter members of the club: Thomas Byrnes, famous N. Y. City Police Chief, Senator John Wagner, George Gillig, Col. Jacob Ruppert, George E. Ruppert, Jacob Siegel and the four Hupfel brothers, Adolph G., Antone C. G., Chris G. and C. Chris G. With the exception of the first two these men are all living and still taking an active interest in the Club. In fact Jacob Siegel is President of the Board of Directors of the club for 1930.

For 30 years the club maintained a floating clubhouse anchored in a cove of the N. Shrewsbury River opposite Red Bank. Two years ago the clubhouse was moved to the anchorage on the Red Bank side of the river. This clubhouse will probably be used as a dock house on the new property.

Through the efforts of Gerald C. Holbrook, commodore of the club for the last three years, who had the Gold cup contender Jersey Lightning built, the club obtained the Gold Cup race last year for their waters. The 27th Gold Cup Regatta was so successful that Richard Hoyt the winner of the coveted trophy last year, has agreed to defend the cup at Red Bank again this year. While the 28th Gold Cup Regatta is run by the New Jersey Gold Cup Association, this Association is made up of members of the Red Bank Yacht Club and the new clubhouse will be the headquarters of the regatta committee during the races.

STRUCTURAL AND MECHANICAL SPECIFICATIONS
CRUISERS AND EXPRESS CRUISERS

NAME OR NUMBER OF MODEL	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Boat Speed	Propeller, Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	Staterooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing	Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revolutions	Weight				Fuel	Water	
A. C. F.																							
New York, N. Y.																							
30 Cruiser Runab't	1	2	1	1	1	Smooth	⅞x1¼	8¼ 2¾ Pine	¾ Pine	Bronze	Mahogany	Bronze	Gray	100	3⅜x4½	2400	900	22	16x12	1¼ Tobin	80	40	.....
30 Cruiser	2	6	1	1	1	Smooth	1⅜x1⅜	11 Pine	⅞ Pine	Galvanized	Mahogany	Bronze	Gray	40	3½x3¾	1500	800	10	16x12	1¼ Tobin	50	30	.....
38 Sport Cruiser	1	4	1	1	1	Smooth	⅞x1¼	8 3¾ Pine	¾ Pine	Bronze	Mahogany	Bronze	Gray	2-100	3⅜x4½	2400	900	26	17x12	1⅜ Tobin	150	45	.....
40 Cruiser	2	6	1	2 to 3	3	Smooth	1½x1½	11 5 Pine	1 Pine	Bronze	Mahogany	Bronze	Hall Scott	100	4¼x5½	1800	2200	15	24x26	1½ Tobin	220	80	.....
46 Cruiser	2	7	1	3	3	Smooth	1¼x1½	9 5 Pine	1 Pine	Bronze	Mahogany	Bronze	Gray	2-90	3⅞x5	2200	850	18	18x12	1¼ Tobin	225	100	.....
47 Cruiser	2	7	1	2	2	Smooth	1⅞x2	10 5½ Oak	1¼ Pine	Bronze	Mahogany	Bronze	Hall Scott	100	4¼x5½	1800	2200	13	30x32	1¾ Tobin	220	150	.....
54 Twin Screw Motor Yacht	2	8	1	2	3	Smooth	1½x1½	11 Oak	1¼ Pine	Bronze	Mahogany	Bronze	Hall Scott	2-100	4¼x5½	1800	2200	15	30x30	1⅞ Tobin	450	275	.....
54 Twin Screw Motor Yacht	3	8	1	2	3	Smooth	1½x1½	11 Oak	1¼ Pine	Bronze	Mahogany	Bronze	Hall Scott	2-175	5x7	1800	2820	19	30x28	1⅞ Tobin	450	275	1500-Watt
6 Twin Screw Motor Yacht	3	.....	1	3	3	Smooth	2x2	11½ Oak	1¼ Pine	Bronze	Mahogany	Bronze	Hall Scott	2-175	5x7	1800	2820	18	30x28	2 Tobin	750	300	Stern's 2½-KW. Universal
BANFIELD																							
Atlantic Highl'ds, N.J.																							
32 Std. Sgle. Cabin	1	4	1	1	1	Lap	⅞x1¾	6 2 Spruce-Flat	¾ Mah.	Cpr. & Brs.	Brass	Bronze	Optional	200	.....	.....	.....	30	.....	1¼ Monel	100	30	.....
32 Std. Dble. Cabin	2	6	1	1	1	Lap	⅞x1¾	6 2 Spruce-Flat	¾ Mah.	Cpr. & Brs.	Brass	Bronze	Optional	130	.....	.....	.....	22	.....	1¼ Monel	100	30	.....
32 De Luxe Sg. Cab.	1	4	1	1	1	Lap	⅞x1¾	6 2 Spruce-Flat	¾ Mah.	Cpr. & Brs.	Brass	Bronze	Optional	200	.....	.....	.....	30	.....	1⅜ Monel	100	30	.....
32 De Luxe Db. Cab.	2	6	1	1	1	Lap	⅞x1¾	6 2 Spruce-Flat	¾ Mah.	Cpr. & Brs.	Brass	Bronze	Optional	130	.....	.....	.....	22	.....	1¼ Monel	100	30	.....
BLANCHARD																							
Seattle, Wash.																							
26	.....	2	1	1	1	Smooth	Oak	8 Fir	Cedar	Galvanized	Mahogany	Bronze	Red Wing	50	.....	.....	.....	14	.....	1¼ Bronze	50	30	.....
32	.....	4	1	1	1	Smooth	Oak	9 Fir	Cedar	Galvanized	Mahogany	Bronze	Red Wing	80	.....	.....	.....	12	.....	1¼ Bronze	100	60	.....
36	1	6	1	1	1	Smooth	Oak	9 Fir	Cedar	Galvanized	Teak	Bronze	Red Wing	80	.....	.....	.....	13	.....	1¼ Bronze	180	60	.....
45	1	7	1	1	1	Smooth	Oak	9 Fir	Cedar	Galvanized	Teak	Bronze	Optional	.....	.....	.....	.....	13	.....	1⅜ Bronze	200	250	Yes
BROOKS																							
Saginaw W.Side, Mch.																							
*291	1	2	1	1	1	Smooth	1¼ Oak	36 2¾ Oak	⅞ Cypress	Galv. or Brs.	Optional	Iron or Brs.	Gray	50	4x5	1800	850	12	19x16	1⅜ St. or Bs.	Opt.	Opt.	.....
*292	1	2	1	1	1	Smooth	1¼ Oak	36 2¾ Oak	⅞ Cypress	Galv. or Brs.	Optional	Iron or Brs.	Universal	75	3½x4½	3000	790	13	18x24	1⅜ St. or Bs.	Opt.	Opt.	.....
*293	2	4	1	1	1	Smooth	1¼ Oak	36 3¾ Oak	⅞ Cypress	Galv. or Brs.	Optional	Iron or Brs.	Gray	110	3⅝x4½	2400	900	14½	24x20	1⅜ St. or Bs.	Opt.	Opt.	.....
*242	1	2	1	1	1	Smooth	1⅝x1⅜ Oak	7¾ 2¾ Oak	⅞ Cypress	Galv. or Brs.	Optional	Iron or Brs.	Gray	50	4x5	1800	850	13	19x16	1⅜ St. or Bs.	Opt.	Opt.	.....
CHRIS-CRAFT	*All models supplied knock-down.																						
Algonac, Mich.																							
121 Custom Commuter	1	1	1	1	1	Dble Bot. Sm.	1⅛x3½	12 2½x5	¾ Bot., ⅝ Sides	Brs. & Bse.	Crodon	Bronze	Scripps or Kermath	2-200	5x5¾	.....	.....	40	18x24	1¼ Monel	152	.....	Delco 12-V.
						Batten Sides	⅞x1¼	6															
122 Commuting Cruiser	1	4	1	1	1	Dble Bot. Sm.	1⅛x3½	12 & 24 5	1⅛Bot.,⅝Side	Brs. & Bse.	Crodon	Bronze	Chris Craft	225	5x5¼	2000	1500	30	20x18	1⅜ Monel	180	40	Delco 12-V.
123 Chris-Craft Yacht	2	6	1	2	2	Batten Sides	⅞x1¼	6															
						Dble Bot. Sm.	1⅛x3½	12 & 24 5x6	¾ Bot., ⅝ Side	Brs. & Bse	Crodon	Bronze	Chris Craft	2-225	5x5¼	2000	1500	30	21x19	1⅜ Monel	340	76	Delco 12-V.
						Batten Sides	1x1¼	6															
CONSOLIDATED																							
Morris Hgts, N. Y. Cy																							
55 Cruiser	2	6	1	3	3	Double	10	Oak	Mah. & Ced.	Copper	Mahogany	Bronze	2 Speedways	170 ea.	5¾x7	1200	2025	20	26x22	Bronze	400	150	Yes
CORSAIR																							
Detroit, Mich.																							
Cruisader 30	1	2	1	1	1	Smooth	1⅜x1⅜	11⅛ 2⅞ Oak	Mahogany	Bronze	Mah. & Brs.	Bronze	Chrysler	120	3⅝x5	2750	1000	18	20x20	.....	120	30	.....
Cruisader 30A	1	4	1	1	1	Smooth	1⅜x1⅜	11⅛ 2⅞ Oak	Mahogany	Bronze	Mah. & Brs.	Bronze	Chrysler	120	3⅝x5	2750	1000	18	20x20	.....	120	30	.....
Cruisader 36	1	4	1	1	1	Smooth	1½x1½	9¼ Oak	Mahogany	Bronze	Mah. & Chr.	Bronze	Scripps	200	5x5¾	2200	1135	24	18x14	.....	120	50	.....
DACHEL CARTER																							
Benton Harb., Mich.																							
DAUNTLESS																							
Millard Bewster & Chambers New York	3	6	1	3	3	Smooth	1⅜ 1¼ Oak	10 3⅝x6 Oak	1¼ Indoako	Bronze	Mahogany	Bronze	Lathrop	100	5¼x6¼	1000	2500	13¼	24x24	1¾ Bronze	200	75	32-Volt Homelite
DAWN																							
Clason Point, N. Y.																							
45 Cruiser	3	7	1	3	3	Smooth	1⅝x1⅞ Oak	11 4¼ Oak	1¼ & 1 Ced.	Copper	Mahogany	Bronze	2 Lathrop	70 ea.	4⅝x5½	1300	1700ea	15	22x14	1½ Bronze	270	110	None
48 De Luxe	3	8	1	3	3	Smooth	1⅝x1⅞ Oak	11 4¾ Oak	1¼ & 1 Ced.	Copper	Mahogany	Bronze	2 Lathrop	70 ea.	4⅝x5½	1300	1700ea	15	22x14	1¾ Bronze	270	110	600-Watt Homelite
48 Express	3	8	1	3	3	Smooth	1⅝x1⅞ Oak	11 4¼ Oak	1¼ & 1 Ced.	Copper	Mahogany	Bronze	2 Sterling	200 ea.	5¼x6	1600	1800ea	20	23x16	1¾ Bronze	270	110	600-Watt Homelite

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF CRUISERS AND EXPRESS CRUISERS

NAME OR NUMBER OF MODEL	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Boat Speed	Propeller, Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	State-rooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing	Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revo-lutions	Weight				Fuel	Water	
DODGE																							
New York, N. Y.																							
45 Express	1	8	1	2	2	Batten	1-1½x3½ Oak	18 Flr	⅜ Mah. Sides 1 Dble Bot.	Bze. & Brs.	Mah. & Nickel Silver	Bronze	2 Lycoming	300 ea.	4⅝x5	2400	.....	35	22x20	1⅜ Monel	250	Yes	Yes
DYER MOT'CRAFT																							
E. Greenwich, R. I.																							
38 Speed Sedan	.....	4 Pull-man	1	1	1	Smooth	Mahogany	Oak	Dble Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional	200	.....	.....	.....	30	.....	Monel	150	20	.....
38 Speed Sedan (Twin Screw)	.....	4 Pull-man	1	1	1	Smooth	Mahogany	Oak	Dble. Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional	400	.....	.....	.....	41	.....	Monel	225	20	.....
38 Exp. Commuter (Twin Screw)	.....	6	1	2	2	Smooth	Mahogany	Oak	Dble Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional	400	.....	.....	.....	27-30	.....	Monel	250	50	.....
42 Exp. Commuter (Twin Screw)	.....	8	1	2	2	Smooth	Mahogany	Oak	Dble Diag. Outside Mah.	Brs. & Cpr.	Mahogany	Bronze	Optional	400	.....	.....	.....	27-30	.....	Monel	400	50	.....
ELCO																							
Bayonne, N. J.																							
Twenty-Six	1	4	1	1	1	Smooth	1¼x1¼x12	2¾ Oak	⅞ Cedar	Bronze	Mahogany	Mah. Outb'd	Elco-Gray	45	3⅜x4	1800	.....	11	.....	1⅛ Bronze	50	50	.....
Veedette	1	4	1	1	1	Smooth	⅞x⅞x10	2¾ Oak	¾ Cedar	Bronze	Mahogany	Bze. Outb'd	Elco-Buda	80	4½x5½	1800	.....	20	.....	1¼ Bronze	75	45	.....
Cruisette	2	6	1	1	1	Smooth	1⅝x1⅜12	3 Oak	⅞ Cedar	Bronze	Mahogany	Bze. Outb'd	Elco-Buda	125	4¾x6	1800	.....	16	.....	1½ Bronze	120	60	.....
Thirty-Eight	3	7	1	2	2	Smooth	1⅜x1⅝x12	3½ Oak	⅞ Cedar	Bronze	Mahogany	Bze. Inb'd	Elco F-62	145	5x6	1600	.....	15	.....	1½ Bronze	145	90	.....
Forty-Two	4	7	1	2	2	Smooth	1½x1½x12	3¾ Oak	1⅛ Cedar	Copper	Mahogany	Bze. Inb'd	Elco F-62	145	5x6	1600	.....	13	.....	1½ Bronze	200	150	.....
Fifty	4	9	1	2	2	Smooth	1⅝x1⅝x12	4 Oak	1⅛ Cedar	Copper	Mahogany	Bze. Inb'd	Elco F-62	145 ea.	5x6	1600	.....	15	.....	1½ Bronze	30	220	Yes
FAIRFORM																							
Jacksonville, Fla.																							
45 Cruiser	1	7	1	2	2	Smooth	Oak	Oak	Mahogany	Bronze	Mahogany	Bronze	2 Kermath	200 ea.	.....	1650	.....	25	Columb'n	Everdur	250	140	U.S.Motors
54 Cruiser	1	9	1	3	3	Smooth	Oak	Oak	Mahogany	Bronze	Mahogany	Bronze	2 Sterling	290 ea.	.....	1600	.....	30	Columb'n	Everdur	400	140	U.S.Motors
GRANDY																							
Seattle, Wash.																							
28	.....	4	.....	.....	.....	.....	1½x1⅝ Oak	.....	⅞ Cedar	.....	.....	.....	Gray	60	.....	.....	.....	8	.....	.....	.....	.....	.....
30	.....	6	.....	.....	.....	.....	1½x1⅝ Oak	.....	⅞ Cedar	.....	.....	.....	Gray	72	.....	.....	.....	11	.....	.....	.....	.....	.....
36	.....	6	.....	.....	.....	.....	1½x1⅝ Oak	.....	1 Cedar	.....	.....	.....	Gray	90	.....	.....	.....	13	.....	.....	.....	.....	.....
40	.....	7	.....	.....	.....	.....	1½x1¾ Oak	.....	1⅛ Cedar	.....	.....	.....	Hall Scott	100	.....	.....	.....	16	.....	.....	.....	.....	.....
GREENPORT																							
Greenport, N. Y.																							
40 De Luxe	2	6	1	2	2	Smooth	Oak 10	4 Oak	1 Cedar	Copper	Mahogany	Bronze	Buda	115	4½x6	1250	1800	12	21x16	1⅛ Bronze	170	75	12-V. Homelite
40 Standard	2	6	1	2	2	Smooth	Oak 10	4 Oak	1 Cedar	Copper	Mahogany	Bronze	Buda	115	4½x6	1250	1800	12	21x16	1⅛ Bronze	170	75	.....
HACKER CRAFT																							
Mt. Clemens, Mich.																							
HOLL-CRAFT																							
Boston Mass.																							
56 Steel Cruiser	5	8	1	3	3	Steel	Steel angles	Steel	1⅛ Teak	Bronze	Teak	¼ Steel	Diesel	2-70	4¾x7½	900	3100	16	Bronze	2¾ Steel	800	500	32-Volt Kohler
HUMPHREYS SEA CRUISER																							
New York, N. Y.																							
40 Pilot	2	4	1	2	2	Smooth	1⅜x1⅝ 7	3½ Oak	1 Cedar	Copper	Mahogany	Bronze	Optional	65	.....	1000	.....	12	.....	1½ Bronze	300	80	32-V. with motor
46 Navigator	2	6	1	3	3	Smooth	1⅝x1⅝ 7	4 Oak	1⅛ Cedar	Copper	Mahogany	Bronze	Optional	100	.....	1000	.....	13	.....	1⅝ Bronze	300	100	32-V. with motor
50 Challenger	3	7	1	3	3	Smooth	1½x1¾ 8	4½ Oak	1¼ Cedar	Copper	Walnut or Mahogany	Bronze	Optional	100	.....	1000	.....	13-14	.....	1¾ Bronze	450	150	32-V. Falcon
55 Privateer	4	7	1	3	3	Smooth	1½x1⅞ 8	5 Oak	¾ Cedar & ¾ Mah.	Copper	Walnut or Mahogany	Bronze	1 or 2 Treiber	2-100	.....	1000	.....	15	.....	1¾ Bronze	600	200	32-V. Falcon
60 Explorer	4	8	1	3	3	Smooth	1½x1⅞ 8	5½ Oak	¾ Cedar & ¾ Mah.	Cpr. & Bze.	Walnut or Mahogany	Bronze	Optional	180	.....	750	.....	14	.....	1⅞ Bronze	600	200	110-V. Bolinder
65 Destroyer	4	8	1	3	3	Smooth	1¾x2 9	6½ Oak	1⅝ Cedar	Cpr. & Bze.	Walnut or Mahogany	Bronze	Optional	2-150	.....	1000	.....	17	.....	2 Bronze	600	250	110-V. Bolinder
70 Discoverer	2 Dble 2 Sgle	8	1	3-4	3-4	Smooth	1⅞x2½ 10	7 Oak	⅞ Mah. & 1 Cedar	Cpr. & Bze.	Walnut or Mahogany	Bronze	2 Optional	2-200	.....	750	.....	14	.....	2¼ Bronze	.....	.....	110-V. Bolinder
75 Commander	2 Dble 2 Sgle	9	1	3-4	3-4	Smooth	2x2½ 12	7½ Oak	2 Cedar or Pine	Cpr. & Bze.	Walnut or Mahogany	Bronze	2 Optional	2-200	.....	750	.....	16	.....	2½ Bronze	1500	1000	110-V. Treiber

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF CRUISERS AND EXPRESS CRUISERS

NAME OR NUMBER OF MODEL	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Boat Speed	Propeller Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	Staterooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing		Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revolutions	Weight				Fuel	Water	
JARDINE																								
Atlantic City, N. J.																								
Jardine 35	1	4	1	1	1	Sm. Bot., Lap Side	⅞x1½ Oak	8 & 4	2½x14 Pine Flat	⅜ Cedar	Cpr., Bze. & Brs.	Mahogany	Bronze	Sterling	150	4⅞x6	1600	1500	20	20x20	Everdur	160	50	.....
KING SEA SKIFF																								
Highlands N. J.																								
30 Tr. Cab. Cruiser	.....	2 & 4	1	1	2	Lap Strake	1⅜x⅞ Oak	9	Oak	¾ Cedar	Cpr. & Brs	Mahogany	Brs. & Bze.	Optional	100	.....	.....	.....	16	.....	1⅛ Monel	60	15	.....
28 R. D. Cruiser	.....	2	1	1	1	Lap Strake	1⅜x⅞ Oak	9	Oak	¾ Cedar	Cpr. & Brs.	Mahogany	Brs. & Bze.	Optional	100	.....	.....	.....	20	.....	1⅛ Monel	60	15	.....
LIGGETT																								
Wyandotte, Mich.																								
35 Single Cabin Cruiser	1	4	1	1	1	Smooth	1¼x4⅜ Oak	10	6x14 Oak	1-1¼ Mah.	Copper	Mahogany	Bronze	Kermath	200	.....	.....	.....	23	21x12	Bronze	140	52	.....
35 Double Cabin Cruiser	2	6	1	1	1	Smooth	1¼x1⅜ Oak	10	6x14 Oak	1-1¼ Mah.	Copper	Mahogany	Bronze	Kermath	200	.....	.....	.....	23	21x12	Bronze	140	52	.....
35 Sport Cruiser	1	4	1	1	1	Smooth	1¼x1⅜ Oak	10	6x14 Oak	1-1¼ Mah.	Copper	Mahogany	Bronze	Kermath	200	.....	.....	.....	23	21x12	Bronze	140	52	.....
35 Dbl. Cab., Open Bdg, Aft Windsh'ld	2	6	1	1	1	Smooth	1¼x1⅜ Oak	10	6x14 Oak	1-1¼ Mah.	Copper	Mahogany	Bronze	Kermath	150	.....	.....	.....	20	21x12	Bronze	140	52	.....
35 Double Cabin, Enclosed Bridge	2	5	1	1	1	Smooth	1¼x1⅜ Oak	10	6x14 Oak	1-1¼ Mah.	Copper	Mahogany	Bronze	Kermath	150	.....	.....	.....	20	21x12	Bronze	140	52	.....
40 Double Cabin Cruiser	2	8	1	2	2	Smooth	1¼x1½ Oak	10	6x16 Oak	1 Mah.	Copper	Mahogany	Bronze	Kermath	200	.....	.....	.....	20	22x14	Bronze	160	60	.....
47 Dbl. Cab., Encl. Deckhouse	2	9	1	3	3	Smooth	1½x1¾ Oak	10	7x27 Oak	1¼ Mah.	Copper	Mahogany	Bronze	Kermath	200	.....	.....	.....	18	2-22x14	Bronze	260	100	.....
MATTHEWS																								
Port Clinton, Ohio																								
38 Single Cabin	1	4	1	1	1	Smooth	Oak 1¼x1½	9	7x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	125	4⅝x5⅜	1750	1200	17	21x13	1⅜ Bronze	100	65	.....
38 Double Cabin (Open Bridge)	2	7-9	1	2	2	Smooth	Oak 1¼x1½	9	7x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	125	4⅝x4⅝	1750	1200	17	21x13	1⅜ Bronze	120	100	.....
38 Double Cabin (Encl. Bridge)	2	7-9	1	2	2	Smooth	Oak 1¼x1½	9	7x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	125	4⅝x5½	1750	1200	15	21x13	1⅜ Bronze	120	100	.....
38 Day Cruiser (Open Bridge)	1	5-6	1	1-2	1	Smooth	Oak 1¼x1½	9	7x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	125	4⅝x5½	1750	1200	16	21x13	1⅜ Bronze	120	100	.....
38 Day Cruiser (Encl. Bridge)	1	5-6	1	1-2	1-2	Smooth	Oak 1¼x1½		7x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	125	4⅝x5⅜	1750	1200	15	21x13	1⅜ Bronze	120	100	.....
38 Sport Cruiser	1	4	1	1	1	Smooth	Oak 1¼x1½	9	7x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	150	5x5¾	1850	1200	19	21x13	1¾ Bronze	175	100	.....
38 De Luxe Double Cabin Sport	2	6-7	1	2	2	Smooth	Oak 1¼x1½	9	7x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	150	5x5¾	1850	1200	18	21x13	1⅜ Bronze	175	100	.....
46 Single Cabin	1-2	4	1	2	2	Smooth	Oak 1¼x1½	9	7½x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	150	5x5¾	1900	1200	17	21x13	1⅜ Bronze	175	100	.....
46 Double Cabin (Open Bridge)	2	8-10	1	3	3	Smooth	Oak 1¼x1½	9	7½x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	150	5x5¾	1900	1200	17	21x13	1½ Bronze	175	100	.....
46 Double Cabin (Encl. Bridge)	2	8-10	1	3	3	Smooth	Oak 1¼x1½	9	7½x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	150	5x5¾	1900	1200	17	21x13	1⅜ Bronze	175	100	.....
46 Sport Cruiser	1	4	1	1	1	Smooth	Oak 1¼x1½	9	7½x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	150	5x5¾	1900	1200	18	21x13	1½ Bronze	175	100	.....
46 De Luxe Double Cabin Sport	2-3	8-9	1	3	3	Smooth	Oak 1¼x1½	9	7½x12 Oak	1⅛ to ⅞ Phil.	Cpr. & Glv.	Philippine	Bronze	Kermath	150	5x5¾	1900	1200	17	21x13	1½ Bronze	250	100	.....
N. Y. YACHT, LAUNCH & ENGINE																								
New York, N. Y.																								
77 Cruiser	4	6	Yes	2	2	Double	12		Oak	Fir	Bronze	Mahogany	Bronze	2-20th Cent.	2-100	6½x8½	600	4500	14	32x30	Bronze	600	600	4-KW. Universal
OWENS																								
Annapolis, Md.																								
26 Cruiser	1	2	1	1	1	Smooth	Oak	9	3 Oak	⅜ Ced., ¼ Ma.	Copper	Mahogany	Bronze	Optional:	40-110	.....	.....	.....	14-24	.....	.....	50	20	.....
PLAYMATES																								
Brooklyn, N. Y.																								
22 Baby Sedan	.....	1	.....	.....	.....	Sm. or Lap	¾x1⅜ Oak	7	2½ Pine	⅜ Ced. or Ma.	Cpr. & Brs.	Mahogany	12x14 Brass	Chrysler	70	3¼x4½	2200	800	20	16x10	1⅜ Bronze	50	.....	.....
26 Junior Sedan	.....	1	.....	.....	.....	Sm. or Lap	¾x1½ Oak	7	4 Pine	⅜ Ced. or Ma.	Cpr. & Brs.	Mahogany	14x16 Brass	Chrys. AMR.	110	3⅝x5	2800	1000	26	18x22	1⅜ Bronze	70	.....	.....
29 Playmate Sedan	.....	1	.....	.....	.....	Sm. or Lap	¾x1½ Oak	7	4 Pine	⅜ Ced. or Ma.	Cpr. & Brs.	Mahogany	14x16 Brass	Chrys. AMR.	110	3⅝x5	2800	1000	23	18x20	1⅜ Bronze	100	.....	.....
READER																								
Seattle, Wash.																								
Speedcruiser	1	2	1	1	1	Smooth	⅞x1¼ Oak	8	3½ Fir	¾ Cedar	Screws	.....	Bronze	Gray	30	3¾x4¼	2400	490	15	.....	.....	40	20	.....

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF CRUISERS AND EXPRESS CRUISERS

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF CRUISERS AND EXPRESS CRUISERS

NAME OR NUMBER OF MODEL	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Best Speed	Propeller, Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	State-rooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing	Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revo-lutions	Weight				Fuel	Water	
RICHARDSON CRUISABOUT																							
No. Tonawanda, N. Y.																							
29 Single Cabin	1	4	1	1	1	Smooth	1⅛x1⅜	10	3	⅞	Galvanized	Mahogany	Bronze	Gray	60	3⅛x4	1600	660	13	16x12	1⅛ Bronze	60	25	.....
29 Double Cabin	2	6	1	1	1	Smooth	1⅛x1⅜	10	3	⅞	Galvanized	Mahogany	Bronze	Gray	60	3⅛x4	1600	660	13	16x12	1⅛ Bronze	60	25	.....
RICKRUISER																							
New York, N. Y.																							
30	1	4	1	1	2	Smooth	Oak	10	Oak	Mahogany	Bronze	Mahogany	Bronze	Gray	Opt.	.....	.....	.....	19	17x12	1⅛ Tobin	70	40	.....
ROBINSON SEA GULL																							
Benton Harbor, Mich.																							
Standard Sedan	1	4	1	1	1	Smooth		12	One Piece	Mahogany	Brs. & Cpr.	Mahogany	Bronze	Hall Scott	200	5x7	1725	1650	32	20x22	1⅝ Monel	160	50	.....
Ford Cockpit Sedan	1	2-4	1	1	1	Smooth		12	One Piece	Mahogany	Brs. & Cpr.	Mahogany	Bronze	Hall Scott	200	5x7	1725	1650	32	20x22	1⅝ Monel	160	50	.....
40 Cruiser	1	4	1	1	1	Smooth		12	One Piece	Mahogany	Brs. & Cpr.	Mahogany	Bronze	Optional	200	5x7	1725	1650	32	20x22	1⅝ Monel	160	50	.....
40 Twin Screw	1	4	1	1	1	Smooth		12	One Piece	Mahogany	Brs. & Cpr.	Mahogany	Bronze	Scripps	150	4½x6¾	1725	1650	32	20x22	1⅝ Monel	160	50	.....
45 Tw. Sc. Sgl. Cab.	1	4	1	1	1	Smooth		12	One Piece	Mahogany	Brs. & Cpr.	Mahogany	Bronze	Hall Scott	240	5x7	1950	1650	32	20x22	1⅝ Monel	300	50	.....
45 Tw. Sc. Db. Cab.	2	8	1	2	2	Smooth		12	One Piece	Mahogany	Brs. & Cpr.	Mahogany	Bronze	Hall Scott	240	5x7	1950	1650	32	20x22	1⅝ Monel	300	50	.....
SEA BRIGHT DORY WORKS																							
Long Branch, N. J.																							
26 Sea Skiff Cruiser	1	4	1	1	1	Lap Strake		6	2x24 Flat	⅜	Copper	Mahogany	Bronze	Optional	110	.....	2-3000	900	21	.....	1⅛ Monel	80	60	Optional
30 Sea Skiff Cruiser	1	6	1	1	1	Lap Strake		6	3x30 Flat	⅜	Copper	Mahogany	Bronze	Optional	200	.....	2200	1500	22	20x14	1⅝ Monel	150	80	400 W. U. S.
36 Sea Skiff Cruiser	2	8	1	1	1	Lap Strake		6	4x36 Flat	1	Copper	Mahogany	Bronze	Optional	200	.....	1800-2000	1500	18	.....	1⅝ Monel	200	100	400 W. U. S.
SEVEN SEAS CRUISERS																							
Seven Seas Cruiser	2	6	1	3	2	Smooth	1⅜x1⅞ Oak	12	6 Oak	Mahogany	Copper	Teak	2 Bronze	2 Sterlings	180 ea.	5½x6	1800	1500	23	22x16 Columb'n	1⅝ Bronze	400	200	Stearns 32-V.
STAPLES JOHNSTON																							
Biddeford, Me.																							
Marblehead	.....	4	1	1	1	Smooth	1⅜x1⅜	10	3 Oak	⅞ Mah.	Bronze	Mahogany	Bronze	Kermath	100	4½x5½	1800	1205	17	20x14	1⅛ Everdur	100	40	.....
STEPHENS																							
Stockton, Cal.																							
34	1	4	1	1	1	Smooth	1¼x1¼ Oak	9	3x8 Pine	⅞ Cedar	Bronze	Teak	Bronze	Scripps	80	3¾x5	1800	750	16	16x13	1¼ Bronze	120	70	.....
43	2	6	1	2	2	Smooth	1½x2 Oak	9	4x8 Pine	1⅛ Cedar	Bronze	Teak	Bronze	2 Scripps	160	3¾x5	1900	1500	18	16x13	1⅝ Bronze	250	100	.....
47	2	7	1	2	2	Smooth	1½x2 Oak	9	4x8 Pine	1¼ Cedar	Bronze	Teak	Bronze	2 Scripps	400	5x5¾	2200	2270	30	18x18	1½ Bronze	400	120	.....
50	2	8	1	3	3	Smooth	2x2 Oak	10	6x8 Pine	1¾ Cedar	Bronze	Teak	Bronze	3 Scripps	400	5x5¾	2100	2270	25	18x18	1½ Bronze	400	120	.....
TOMS RIVER BOAT WORKS INC.																							
Toms River N. J.																							
Viking 24	.....	2	.....	1	.....	Lap	Oak	7	Yellow Pine	Cedar	Copper	Mahogany	Bronze	Red Wing	50	3⅛x5	2000	750	14	16x12	1⅛ Bronze	60	.....	Standard
Viking 26	.....	2	1	1	.....	Lap	Oak	7	Yellow Pine	Cedar	Copper	Mahogany	Bronze	Gray	60	3⅛x4	2900	660	18	.....	1⅛ Bronze	60	40	Standard
Viking 30	.....	4	1	1	.....	Lap	Oak	7	Yellow Pine	Cedar	Copper	Mahogany	Bronze	Gray	72	3½x4½	2900	740	18	.....	1⅛ Monel	60	40	Standard
TOPPAN																							
Medford, Mass.																							
30 Sea Crest Ex. Cr	1	2-3	1	1	1	Smooth	⅝x1⅛ Oak	12	Oak	¾ Cedar	Bze. or Galv.	Mahogany	Bronze	Optional	100	.....	.....	.....	20	.....	1¼ Bronze	70	Yes	.....
32 Lisenoc Ex. Cr.	2-3	4-8	1	2-3	1-2	Smooth	1x1¼ Oak	6 to 9	Oak	1 Cedar	Bronze	Mahogany	Bronze	Toppan	200	6x6½	1800	1700	32	.....	1¼ Brofise or Monel	100	25	.....
42 Lisenoc Exp. Cr.	2-5	4-10	1	2-4	2-4	Smooth	1¼x1¾ Oak	6 to 12	Oak	1⅛ Cedar	Bronze	Mahogany	Bronze	Toppan	500	.....	.....	.....	40	.....	1¾ Bronze or Monel	240	60-100	.....
VINYARD																							
Milford, Del.																							
Coastwise 50	2	7	1	2	2	Smooth	2x2	12	5	1¾	Copper	Mahogany	Bronze	Sterling	300	5¼x6	1500	2940	14½	24x16	1¾ Bronze	260	200	Delco 750-W.
Gulf Stream 55	3	9	1	3	3	Smooth	2x2	12	5	1¾	Copper	Mahogany	Bronze	Sterling	300	5¼x6	1500	2940	14½	24x16	1¾ Bronze	400	200	Kohler 1500-W.
WHITNEY																							
East Hartford, Con.																							
35	1	8	1	1	1	Smooth	1⅜x1½	10¼	3 Oak	⅞ & 1 Mah.	Bronze	Mahogany	Bronze	Sterling	200	.....	.....	.....	20	20x12	1⅝ Bronze	150	2-50	.....
41	2	6	1	2	2	Smooth	1⅜x1½	10¼	3 Oak	⅞ & 1 Mah.	Bronze	Mahogany	Bronze	2 Chrysler	.....	.....	.....	.....	20	20x20	1¾ Bronze	180	2-137	.....

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF CRUISERS AND EXPRESS CRUISERS

NAME OR NUMBER OF MODEL	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Boat Speed	Propeller, Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	State-rooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing	Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revo-lutions	Weight				Fuel	Water	
WHEELER PLAY-MATE, Bklyn, N. Y.																							
De Luxe Junior	1	3	1	1	.....	Lap or Sm.	¾x1½ Oak	7/4 Pine	¾ Cedar	Cpr. & Brs.	Mahogany	Brass	Chrysler	110	3⅝x5	2800	1125	24	18x22	1⅜ Tobin	70	25	.....
Standard Junior	1	3	1	1	.....	Lap or Sm.	¾x1½ Oak	7/4 Pine	¾ Cedar	Cpr. & Brs.	Mahogany	Brass	Gray	72	3½x4⅝	2200	700	14	18x12	1⅜ Tobin	70	25	.....
ShortCabin Junior	1	2	.....	1	.....	Lap or Sm.	¾x1 £ Oak	7/4 Pine	¾ Cedar	Cpr. & Brs.	Mahogany	Brass	Chrysler	70	3½x5	2200	890	14	18x12	1⅜ Tobin	70	0	.....
Standard	1	4	1	1	1	Lap or Sm.	¾x1½ Oak	7/4 Pine	¾ Cedar	Cpr. & Brs.	Mahogany	Brass	Chrysler	110	3⅝x5	2800	1125	20	19x20	1⅜ Tobin	100	35	.....
Short Cabin	1	2	.....	1	1	Lap or Sm.	¾x1½ Oak	7/4 Pine	¾ Cedar	Cpr. & Brs.	Mahogany	Brass	Chrysler	110	3⅝x5	2800	1125	21	19x20	1⅜ Tobin	100	35	.....
Standard Super	1	4	1	1	1	Lap or Sm.	¾x1¾ Oak	7/4 Pine	⅝ Cedar	Cpr. & Brs.	Mahogany	Brass	Scripps	150	4¾x5¾	2200	1125	20	20x13	1⅜ Tobin	120	50	.....
D'ble Cabin Super	2	6	1	1	1	Lap or Sm.	¾x1¾ Oak	7/4 Pine	⅝ Cedar	Cpr. & Brs.	Mahogany	Brass	Chrysler	110	3⅝x5	2800	1125	17	20x17	1⅜ Tobin	120	50	.....
Sport Fisherman Super Playmate	1	2	1	1	1	Lap or Sm.	¾x1¾ Oak	7/4 Pine	⅝ Cedar	Cpr. & Brs.	Mahogany	Brass	Kermath	200	5x5¾	2000	1500	26	21x13	1⅜ Tobin	120	50	.....
Standard Playmate Cruiser	2	6	1	1	1	Lap or Sm.	⅞x1¾ Oak	7/4 Pine	⅞ Cedar	Cpr. & Brs.	Mahogany	Brass	Sterling	200	5½x6	2000	1540	21	22x13	1⅜ Everdur	150	60	.....
Double Cab. Play-mate Cruiser	2	6	1	1	1	Lap or Sm.	⅞x1¾ Oak	7/4 Pine	⅞ Cedar	Cpr. & Brs.	Mahogany	Brass	Sterling	200	5½x6	2000	1540	20	22x13	1⅜ Everdur	150	60	.....
Combination Sed. Playmate Cruis.	1	6	1	1	1	Lap or Sm.	⅞x1¾ Oak	7/4 Pine	⅞ Cedar	Cpr. & Brs.	Mahogany	Brass	Sterling	200	5½x6	2000	1540	20	22x13	1⅜ Tobin	150	60	.....
Single Cabin Play-mate Senior	2	6	1	1	1	Lap or Sm.	1x1⅜ Oak	7/5 Pine	1 Cedar	Cpr. & Brs.	Mahogany	Brass	Sterling	200	5½x6	2000	1540	18	22x13	1⅜ Everdur	225	70	.....
Double Cabin Play-mate Senior	2	6	1	2	2	Lap or Sm.	1x1⅜ Oak	7/5 Pine	1 Cedar	Cpr. & Brs.	Mahogany	Brass	2-Chrysler	110 ea.	3⅝x5	2800	1125ea	22	22x18	1⅜ Everdur	225	70	.....
Combination Sed. Playmate Senior	2	8	1	1	1	Lap or Sm.	1x1⅜ Oak	7/5 Pine	1 Cedar	Cpr. & Brs.	Mahogany	Brass	Sterling	200	5½x6	2000	1540	18	22x13	1⅜ Everdur	225	70	.....
Double Cabin Play-mate Master	2	6	1	2	2	Lap or Sm.	1⅛x2¼ Oak	7/5½ Pine	1 Cedar	Cpr. & Brs.	Mahogany	Brass	2-Sterling	200 ea.	5½x6	2000	1540ea	24	23x13	1⅜ Everdur	300	95	.....
Combination Sed. Playmate Master	2	8	1	2	2	Lap or Sm.	1⅛x2¼ Oak	7/5½ Pine	1 Cedar	Cpr. & Brs.	Mahogany	Brass	2-Sterling	200 ea.	5½x6	2000	1540ea	24	23x13	1⅜ Everdur	300	95	.....
WILEY Oxford, Md.																							
41 Bridge Deck Cr.	2	6	1	2	2	Smooth	1½x1¼ Oak	9/4 Pine	1 Cedar	Copper	Mahogany	Bronze	Optional	150	5½x6½	1600	.....	16	.....	Bronze	120	50	.....
50 Enclosed Bridge.	3	8	1	3	3	Smooth	2x2 Oak	12Pine	1¼ Cedar	Galvanized	Plain	Oak	Lathrop	100	5½x6½	1000	.....	11	.....	Bronze	120	75	Homelite
GAR WOOD Detroit, Mich.																							
Express Cruiser.....	2	6	1	2	2	Smooth	Sawn	30Oak	Dble Mah.	Brs. & Bse.	Chr. Plated	Bronze	2 Gar Wood	425–525	5x7	2200	1550	42 47	2–22x30	1½ Bronze	500	100	32 V. Delco

STRUCTURAL AND MECHANICAL SPECIFICATIONS OF STANDARDIZED RUNABOUTS, SEDANS AND OPEN BOATS

NAME OR NUMBER OF MODEL	NUMBER OF					Planking: Smooth, Lap Strake, Batten	MATERIAL AND SIZES						ENGINES					Boat Speed	Propeller, Diameter and Pitch	Material of Shaft, and Size	TANKS—GALS.		Separate Generator, Make and Size
	State-rooms	Berths	Galley	Toilet	Wash Basin		Frames and Spacing	Keel	Planking	Fastenings	Trim	Rudder	Make	Horse Power	Bore and Stroke	Revo-lutions	Weight				Fuel	Water	
GAR WOOD Detroit, Mich.																							
30 Runabout.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x4¼ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Nickel Silver	Bronze	Chrysler	125	3⅝x5	3000	930	32	15x14	1x1¼ Bse.	40	.....	.....
30 Sedan.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x4¼ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Nickel Silver	Bronze	Chrysler	125	3⅝x5	3000	930	30	15x14	1x1¼ Bse.	40	.....	.....
40 Runabout.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x4¼ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Chr. Plated	Bronze	Optional	200	5x5¾	2250	.....	42	17x24	1x1¼ Bse.	60	.....	.....
40 Sedan.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x4¼ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Chr. Plated	Bronze	Optional	200	5x5¾	2250	.....	40	17x24	1x1¼ Bse.	60	.....	.....
40 Limousine.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x1¾ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Chr. Plated	Bronze	Optional	200	5x5¾	2250	.....	40	17x24	1x1¼ Bse.	60	.....	.....
50 Runabout.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x4¼ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Chr. Plated	Bronze	Gar Wood	425	5x7	1950	1450	50	21x34	1x1¾ Bse.	85	.....	.....
50 Limousine.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x4¼ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Chr. Plated	Bronze	Gar Wood	425	5x7	1950	1450	48	21x34	1x1¾ Bse.	85	.....	.....
55 Runabout.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x4¼ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Chr. Plated	Bronze	Gar Wood	525	5x7	2200	1500	55	21x34	1x1¾ Bse.	85	.....	.....
55 Limousine.....	.....	.....	.....	.....	.....	Batten	⅞x3 Apitong	24 1¾x4¼ Apitong	Side ½ Mah. Bot. Dbl. ¾ Ma.	Everdur Brs.-Bse.	Chr. Plated	Bronze	Gar Wood	525	5x7	2200	1500	53	21x34	1x1¾ Bse.	85	.....	.....

AMERICA'S LEADING MARINE ENGINES

Newest Sizes and Styles of Marine Engines Arranged Alphabetically for Easy Selection and Comparison

MAKE & MODEL	Horse Power	Bore & Stroke	No. of Cyl	R.P.M.	Weight	Lubrication	Reverse Gear	Starting Device	Ignition System	Spark Plugs	Carburetor
BRENNAN STANDARD											
Syracuse, N. Y.											
N-4	15–40	4 x 5	4	1200	625	Pr	Own	.....	B & M	Ch	Str
N-4	25–50	4 x 5	4	2000	600	Pr	Own	.....	B & M	Ch	Str
N-4	25–60	4½ x 5	4	1500	1000	Pr	Own	.....	B & M	Ch	Str
E-4	50–75	4½ x 5	6	1800	1100	Pr	Own	.....	B & M	Ch	Str
D-6	60–75	4 x 5½	6	2000	900	Pr	Own	.....	Opt	Ch	Str
60	65–100	4⅜ x 5½	6	1800	1200	Pr	Own	.....	Opt	Ch	Str
100	200	5 x 6½	6	2800	1700	Pr	Own	.....	Opt	Ch	Str
Master Six	150	4½ x 6½	6	2800	1500	Pr	Own	.....	Opt	Ch	Str
Gold Cup	50–70	4½ x 5	4	2000	650	Pr	Own	.....	Opt	Ch	Str
EE-4					(H.S. 900						
99 De Luxe	60–115	4 x 5½	6	2500	H.D. 1200	Pr	Own	.....	Opt	AC	Str
125 De Luxe	65–125	4⅜ x 5½	6	2200	H.S. 1000	Pr	Own	.....	Opt	AC	Str
					H.D. 1500)						
BUDA											
Harvey, Ill.											
HM-295	75	3¾ x 4½	6	.....	.....	Pr	Par	El	B & M	.....	Sch
BMA-6	85	4⅛ x 5⅛	6	.....	.....	Pr	Par	El	B & M	.....	Sch
GMF-6	130	4⅜ x 6	6	.....	.....	Pr	Par	El	B & M	.....	Sch
GMFR-6 Red. Gear	130	4¾ x 6	6	.....	.....	Pr	Par	El	B & M	.....	Sch
BUFFALO											
Buffalo, N. Y.											
Navy	14–30	3½ x 5	4	600–1200	690	Cir Spl	Joes	LN	DR or Au	Ch	Zen
Dreadnaught	120	5⅞ x 7	4	1200	2800	Pr	Joes	LN	DR or Au	Ch	Str
Dreadnaught	200	5⅞ x 7	6	1500	3200	Pr	Joes	LN	DR or Au	Ch	Str
Dreadnaught	240	5⅞ x 7	8	1200	4000	Pr	Joes	LN	DR or Au	Ch	Str
Dreadnaught—Red. Gear	200	5⅞ x 7	6	1500	3500	Pr	Joes–Morse Red. Gear	LN	DR or Au	Ch	Str
CE	50–80	6¾ x 9	4	500–800	3200	Pr	Joes	LN	DR or Au	Ch	Str
CHRIS-CRAFT											
Algonac, Mich.											
225	225	5 x 5¼	8	2200	1500	Pr	Own	Delco	Delco	Ch	Sch or Hol
CHRYSLER											
Detroit, Mich.											
A and C Imperial	125	3⅝ x 5	6	2800	940	Pr	Own	DR	DR	.....	Hol
AM Imperial	40–65	3⅝ x 5	6	2800	1000	Pr	Own	DR	DR	.....	Sch
AMR Imperial—Red. Gear	125	3⅝ x 5	6	1400	1125	Pr	Own	DR	DR	.....	Hol
A and C Royal	82	3¼ x 5	6	2800	765	Pr	Own	DR	DR	.....	Sch
AM Royal	30–50	3¼ x 5	6	1600	890	Pr	Own	DR	DR	.....	Sch
AMR Royal—Red. Gear	30–50	3¼ x 5	6	800	890	Pr	Own	DR	DR	.....	Sch
Crown	75	3⅛ x 4⅛	6	3300	625	Pr	Own	DR	DR	.....	Hol
DETROIT MARINE											
Detroit, Mich.											
F-6A	300	6 3 x 7.1	6	1750	1750	Pr	Joes	Gar Wood	DR	Ch	Zen
ELCO											
Bayonne, N. J.											
F4	85	5 x 6	4	1350	1400	Pr	Own	LN	LN & R.Bo	AC	Zen
F-62	125	5 x 6	6	1350	1850	Pr	Own	LN	LN & R.Bo	AC	Zen
FAY & BOWEN											
Philadelphia, Pa.											
LN-403 Gabeat	20	3 x 4	4	1800	365	Pr	Par	Au	B or M	Ch	Sch
LC-41	55	3½ x 4½	6	2000	845	Pr	Par	NE	B	Ch	Sch
LN-43	40	4¾ x 5½	4	1000	950	Pr	Par	NE	B & M	Ch	Sch
LNS-43	60	4¾ x 5½	4	1400	750	Pr	Par	NE	M	Ch	Sch
Challenger	60	3⅝ x 4	6	2800	690	Pr	Joes	Au	B	Ch	Sch
Conqueror	100	4½ x 4¾	6	2200	1150	Pr	Par	Au	B	Ch	Sch
Faybow-Continental L	40	2⅞ x 4¾	6	2200	650	Pr	Par	Au	B	Ch	Sch
Faybow-Continental B	70	3⅝ x 5	6	2200	1075	Pr	Par	Au	B	Ch	Sch
Faybow Continental T	80	4⅛ x 5¼	6	2000	1445	Pr	Par	Au	.....	Ch	Sch
GRAY											
Detroit, Mich.											
One-5	5	3¾ x 4½	1	1200	165	Spl	Par	None	Wi	AC	Til
Two-10	10	3¾ x 4½	2	1200	248	Spl	Par	None	Bo	AC	Til
1227	30	3⅜ x 4¼	4	1800	300	Pr	None	Au	Au & Bo	AC	Til
37	37	3⅜ x 4¼	4	2900	290	Pr	None	Au	Au	AC	Til
25	25	3⅛ x 4¼	4	1800	500	Pr	Par	Au	Au	AC	Til
Four-30	30	3⅜ x 4¼	4	2400	490	Pr	Par	Au	Au & Bo	AC	Til
Four-41	41	3⅜ x 4¼	4	3000	390	Pr	Par	Au	Au	AC	Til
Four-44	45	3⅞ x 4¼	4	2600	550	Pr	Par	Au	Au	AC	Til
Four-50	50	4¼ x 4¼	4	2400	650	Pr	Par	Au	Au	AC	Til
Four-60	55	4¼ x 5	4	1800	850	Pr	Joes	Au	Au & Bo	AC	Sch
Six-50	45	3⅜ x 3⅞	6	2800	540	Pr	Par	Au	Au & Bo	AC	Til
Six-70	72	3⅜ x 4	6	3000	570	Pr	Par	Au	Au	AC	Til
Six-75	77	3⅜ x 4⅝	6	3000	640	Pr	Par	Au	Au	AC	Til
Six-90	100	3⅞ x 4½	6	2800	900	Pr	Joes	Au	Au	AC	Til
Eight	125–140	3⅜ x 4½	8	3000	830	Pr	Joes	Au	Au	AC	John-Hol-Zen
HALLETT											
Los Angeles, Cal.											
R4S	8	2⅞ x 2¾	4	2500	220	Spl	Joes	Au	Au	Sd	Zen
R4	8	2⅞ x 2¾	4	2500	205	Spl	Joes	.....	Bo M	Sd	Zen
HALL-SCOTT											
New York, N. Y.											
H. S. R. 4—Red. Gear	70	4¼ x 5½	4	900	1750	Pr	Own	DR	DR	Ch	Zen
H. S. R. 4—Red. Gear	70	4¼ x 5½	4	600	1750	Pr	Own	DR	DR	Ch	Zen
H. S. R. 6—Red. Gear	100	4¼ x 5½	6	900	2130	Pr	Own	DR	DR	Ch	Zen
H. S. R. 6—Red. Gear	100	4¼ x 5½	6	600	2130	Pr	Own	DR	DR	Ch	Zen
H. S. M. 6	100	4¼ x 5½	6	1800	1640	Pr	Par	DR	DR	Ch	Zen
H. D.-6	175	5 x 7	6	1800	2600	Pr	Own	LN	DR	Ch	Zen
H. D.-6	175	5 x 7	6	900	2820	Pr	Own	LN	DR	Ch	Zen
H. D.-6	175	5 x 7	6	600	2820	Pr	Own	LN	DR	Ch	Zen
L. M. 6-F	200	5 x 7	6	1800	1500	Pr	Joes	LN	DR	Ch	Zen
L. M. 6-G	200	5 x 7	6	1800	1650	Pr	Own	LN	DR	Ch	Zen

*See Page 86 for Key to Equipment Symbols

AMERICA'S LEADING MARINE ENGINES

MAKE & MODEL	Horse Power	Bore & Stroke	No. of Cyl.	R.P.M.	Weight	Lubrication	Reverse Gear	Starting Device	Ignition System	Spark Plugs	Carburetor
INTERNATIONAL											
New York, N. Y.											
16	16	3¾ x 4	4	1000	290	Spl	Joes	Bo	Bo	Bo	Sch
16	16-18	3¾ x 4	4	1200	290	Spl	Joes	Bo	Bo	Bo	Sch
JOHNSTON ROBERTS											
MOTORS, Sandusky, Ohio											
J	16	3¼ x 4	4	1200	285	Pr	.....	.....	AK	.....	Sch
RS	35	.....	4	2000	254	Pr	.....	.....	AK	.....	Sch
Ha	35	2⅞ x 3½	4	4600	116	Pr	.....	.....	Delco or Au	.....	Zen
As	40	3⅞ x 4½	4	1500	335	Pr	.....	.....	Au	.....	Sch or Str
	50	4 x 5	4	1450	680	Pr	.....	.....	AK	.....	Sch
C	60	3⅞ x 4½	4	3000	298	Pr	.....	.....	Au	.....	Sch or Str
KERMATH											
Detroit, Mich.											
4	5	3½ x 4	2	800	380	Pu & Spl	Own	Au	Bo	Ch	May
6	8	3¾ x 4	2	800	380	Pu & Spl	Own	Au	Bo	Ch	May
8	10	4 x 4	2	800	387	Pu & Spl	Own	Au	Bo	Ch	May
12	16	3½ x 4	4	1200	548	Pu & Spl	Own	Au	Bo	Ch	Ka
16	20	3¾ x 4	4	1200	568	Pu & Spl	Own	Au	Bo	Ch	Ka
20	25	4 x 4	4	1200	635	Pu & Spl	Own	Au	Bo	Ch	Ka
35	40	4⅜ x 5½	4	1200	1010	Pr	Par	Delco	Delco	Ch	Sch
50	55	4⅜ x 5½	4	1500	775	Pr	Par	Delco	Delco	Ch	Sch
65	70	4⅜ x 5½	6	1200	1540	Pr	Joes	Delco	Delco	Ch	Sch
85	105	4⅜ x 5½	6	1500	1570	Pr	Joes	Delco	Delco	Ch	Sch
100	100	4⅜ x 5½	6	1800	1205	Pr	Joes	Delco	Delco	Ch	Sch
125	142	4⅜ x 5½	6	2200	1235	Pr	Joes	Delco	Delco	Ch	Sch
150—L Head	.....	5 x 5¾	6	.....	1340	Pr	Joes	Delco	Delco	Ch	Hol D D
150—Overhead Valve	.....	5 x 5½	6	2200	1290	Pr	Joes	Delco	Delco	Ch	Hol D D
200—Overhead Valve	.....	5 x 5¾	6	2250	1390	Pr	Joes	Delco	Delco	Ch	Hol D D
LONG ISLAND											
Sayville, N. Y.											
R	15	3¾ x 4	4	1000	475	Spl	Joes	El	DR	Bo	Ka
HS	25	3¾ x 4	4	2000	410	Spl	Joes	El	DR	Bo	Str
H	30	4 x 5	4	1000	1100	Pr	Joes	El	DR	Bo	Str
HR	45	4 x 5	4	1800	850	Pr	Joes	El	DR	Bo	Str
S-1	5	3¼ x 4¼	1	900	225	Spl	Joes	.....	Bo	Bo	Ka
S-2	10	3¼ x 4¼	2	900	820	Spl	Joes	.....	Bo	Bo	Ka
LYCOMING											
Williamsport, Pa.											
UC	125	3½ x 4½	8	3200	960	Pr	Joes	DR	DR	AC	Sch
UA	40	3½ x 3⅞	4	3500	.....	Pr	Joes	DR	DR	AC	Sch
UE	165	3¾ x 4¾	8	3000	.....	Pr	Joes	DR	DR	AC	Sch
MAYBACH-ZEPPELIN											
New York, N. Y.											
VL-2	600	5⅝ x 7½	12	1600	2450	Pr	Direct Rev.	Air	Rob Bo	Rob Bo	Own
S-5	110	3⅝ x 6½	6	1800	1085	Pr	Own	Rob Bo	Rob Bo	Rob Bo	Own
MURRAY & TREGURTHA											
N. Quincy, Mass.											
E-4	50	6½ x 8	4	550	2500	Pr	Own	NE	Bo & DR	AC	Zen
E-6	75	6½ x 8	6	550	3500	Pr	Own	NE	Sd & DR	AC	Zen
L-4	60	6½ x 8	4	650	2600	Pr	Own	NE	Bo & DR	AC	Zen
L-6	100	6½ x 8	6	650	3500	Pr	Own	NE	Sd & DR	AC	Zen
H-6	200	7½ x 10	6	800	6000	Pr	Own	Air	Sd & DR	AC	Zen
K-6	300	6¼ x 7¾	6	1650	2100	Pr	Own	LN	4-DR	AC	Mil
J-6	400	7¾ x 9	6	1400	3600	Pr	Own	Gray-Davis	4-DR	AC	Mil
NIAGARA											
Dunkirk, N. Y.											
8L	135	3⅝ x 4½	8	3000	869	Pr	Joes	Au	Au	.....	Sch
8M	155	4 x 4½	8	2800	882	Pr	Joes	Au	Au	.....	Sch
8LR—Red. Gear	135	3⅝ x 4½	8	2750	959	Pr	Joes	Au	Au	.....	Sch
8 MR—Red. Gear	155	4 x 4½	8	2600	971	Pr	Joes	Au	Au	.....	Sch
8LS*	170	3⅝ x 4½	8	3000	929	Pr	Joes	Au	Au	.....	Sch
8 MS*	200	4 x 4½	8	2800	942	Pr	Joes	Au	Au	.....	Sch
8 LSR—Red. Gear*	170	3⅝ x 4½	8	2850	1019	Pr	Joes	Au	Au	.....	Sch
8 MSR—Red. Gear*	200	4 x 4½	8	2700	1032	Pr	Joes	Au	Au	.....	Sch
4H	40	3½ x 4	4	4000	320	Pr	Joes	Au	Au	.....	Til
Special	16	2¾ x 4	4	2000	.....	Pr	Joes	Au	Au	.....	Til
	*Supercharged										
PACKARD											
Detroit, Mich.											
Gold Cup (3M-621)	260	5¾ x 4⅝	6	2500	900	Pr	Joes	Eclipse	Delco	Ch	Str
Sweepstakes (2M-1242)	500	5¾ x 4⅝	12	2500	1175	Pr	Joes	Eclipse	Delco	Ch	Str
Harmsworth (2M-2500)	1000	6⅜ x 6½	12	2450	2025	Pr	Capitol	De Jon	Delco	Ch	Str
PALMER											
Cos Cob, Conn.											
C	4	4½ x 4½	1	600	240	Oil in Gas	Own	Au	Ma & Br	Ch	Sch
YT1	2	3 x 3½	1	1000	98	Spl	Own	Au	Timer	Ch	May
NL1	3½	4½ x 4½	1	600	350	Spl	Own	Au	Timer	Ch	Sch
LH	10-15	3 x 4	4	1500	375	Pr	Own	Au	Au	Ch	Zen
PB6	35-40	3½ x 4½	6	1400	1000	Pr	Own	Au	Au	Ch	Sch
PNR1	5-6	5 x 6	1	900	400	Spl	Own	Au	Timer	Ch	Sch
ZR1	7	5½ x 6	1	700	425	Spl	Own	Au	Timer	Ch	Sch
PNR2	12	5 x 6	2	900	750	Spl	Own	Au	AK	Ch	Sch
ZR2	18	5½ x 6	2	800	775	Spl	Own	Au	AK	Ch	Sch
PNR3	18	5 x 6	3	900	1000	Spl	Own	Au	AK	Ch	Str
ZR3	30	5½ x 6	3	800	1100	Spl	Own	Au	AK	Ch	Str
PNR4	24	5 x 6	4	900	1250	Spl	Own	Au	AK	Ch	Str
ZR4	40	5½ x 6	4	800	1300	Spl	Own	Au	AK	Ch	Str
F2	16-18	6¾ x 8	2	400	1600	Spl & Oiler	Own	Au	AK	Ch	Str
NK2	20-25	7½ x 10	2	400	3000	Spl & Oiler	Own	Au	AK	Ch	Str
F3	24-26	6¾ x 8	3	400	2000	Spl & Oiler	Own	Au	AK	Ch	Str
NK3	30-35	7½ x 10	3	400	3500	Spl & Oiler	Own	Au	AK	Ch	Str
F4	32-35	6¾ x 8	4	400	2400	Spl & Oiler	Own	Au	AK	Ch	Str
NK4	45-50	7½ x 10	4	400	4200	Spl & Oiler	Own	Au	AK	Ch	Str
F6	50	6¾ x 8	6	450	3600	Spl & Oiler	Own	Au	AK	Ch	Str
NK6	80	7½ x 10	6	450	5400	Spl & Oiler	Own	Au	AK	Ch	Str
PAL	20-25	4 x 5	4	1400	750	Pr	Own	DR	DR	Ch	Sch

*See Page 86 for Key to Equipment Symbols

AMERICA'S LEADING MARINE ENGINES

MAKE & MODEL	Horse Power	Bore & Stroke	No. of Cyl.	R.P.M.	Weight	Lubrication	Reverse Gear	Starting Device	Ignition System	Spark Plugs	Carburetor
REDWING											
Red Wing, Minn.											
K	4–5	3¼ x 4¼	1	800	225	Cir			Bo M	Ch	Zen
KK	7–8	3¾ x 4¾	2	800	400	Cir	Par		Bo M	Ch	Zen
D	10–14	2¾ x 4	4	1400	I 350 A 295	Cir	Joes	Au	Bo M	Ch	Str
AA	18–24	3¾ x 4¾	4	1200	I 640 A 530	Pr & Cir	Par	Au	Bo M	Ch	Sch
F	28–36	4⅛ x 5	4	1400	I 845 A 670	Pr	Par	Au	Bo M	Ch	Sch
B	32–40	4½ x 5	4	1400	I 865 A 690	Pr	Par	Au	Bo M	Ch	Sch
88-Four MD	40–50	4½ x 6	4	1200	I 1200	Pr	Par	Au	Bo M	Ch	Sch
88-Four HS	45–70	4½ x 6	4	1800	A 900	Pr	Par	Au	Bo M	Ch	Sch
Big Chief	50–60	5 x 7	4	1200	I 1700 A 1300	Pr	Par	Au	Bo & Dis	Ch	Sch
Big Chief Special	75–90	5¾ x 7	4	1200	I 1750 A 1350	Pr	Par	Au	Bo M & Dis	Ch	Sch
Warrior	30–50	3½ x 5	6	2000	I 750 A 650	Pr & Cir	Par	Au	Dis	Ch	Sch
Arrow	40–80	3¾ x 4½	6	2000	I 1200 A 900	Pr	Joes	Au	Bo M	Ch	Str
88-Six MD	50–80	4½ x 6	6	1200	I 1500	Pr	Par	Au	Bo M & Dis	Ch	Sch
88-Six HS	80–110	4½ x 6	6	1800	A 1200	Pr	Par	Au	Bo M & Dis	Ch	Sch
88-Six Special MD	75–100	5 x 6	6	1200	I 1600	Pr	Par	LN	Bo M & Dis	Ch	Sch
88-Six Special HS	100–150	5 x 6	6	1800	A 1300	Pr	Par	LN	Bo M & Dis	Ch	Sch
Big Chief Six	85–110	5 x 7	6	1200	I 2400 A 1850	Pr	Par	LN	Bo M & Dis	Ch	Sch
Big Chief Special Six	110–150	5¾ x 7	6	1200	I 2450 A 1900	Pr	Joes	LN	Bo M & Dis	Ch	Sch
REGAL											
Coldwater, Mich.											
T	2	3¼ x 3½	1	800	130	Pu	Car John		Dis or Bo M	Ch	Sch
RA	4	4 x 4½	1	800	290	Spl	Par		Dis or Bo M	Ch	Sch
HA	6	4¾ x 5½	1	800	400	Spl	Par		Dis or Bo M	Ch	Sch
EA	7	5¼ x 6½	1	800	610	Spl	Par		Dis or Bo M	Ch	Sch
NB	5	4 x 4½	2	800	540	Pu	Par		Dis or Bo M	Ch	Sch
GB	14	4¾ x 6	2	800	900	Pu	Par	Au	Dis or Bo M	Ch	Sch
KB	16	5½ x 6	2	600	1150	Pu	Par	Au	Dis or Bo M	Ch	Sch
LB	20	6½ x 8	2	600	1850	Pu	Par	Au	Dis or Bo M	Ch	Sch
GC	30	4¾ x 6	4	800	1300	Pu	Par	Au	Dis or Bo M	Ch	Sch
KC	40	5½ x 7	4	800	1900	Pu	Par	Au	Dis or Bo M	Ch	Sch
LD	30	6½ x 8	3	600	2500	Pu	Par	Au	Dis or Bo M	Ch	Sch
LC	40	6½ x 8	4	600	2800	Pu	Par	Au	Dis or Bo M	Ch	Sch
SC	50	7½ x 9	4	500	4000	Me-C	Joes	Au	Dis or Bo M	Ch	Sch
GF	50	4¾ x 6	6	800	1700	Pu	Joes	Au	Dis or Bo M	Ch	Sch
KF	75	5½ x 7	6	800	2700	Pu	Joes	Au	Dis or Bo M	Ch	Sch
SCRIPPS											
Detroit, Mich.											
12	12–18	4½ x 6	2	1000	725	Pr	Par	Au	Am Bo	Ch	Sch
F4	25–40	3¾ x 5	4	1600	600	Pr	Own	DR	DR	Ch	Sch
44	60–75	3¾ x 5	4	2800	550	Pr	Own	DR	DR	Ch	Sch
F6	50–100	3¾ x 5	6	2000	825	Pr	Own	DR	DR	Ch	Sch
126	100	3¾ x 5	6	2000	835	Pr	Own	DR	DR	Ch	Hol D'n Draft
136	135	3¾ x 5	6	3000	750	Pr	Own	DR	DR	Ch	Hol D'n Draft
160	100	4½ x 5¾	6	1800	1250	Pr	Joes	DR	DR	Ch	Hol D'n Draft
162	100	4½ x 5¾	6	1800	1250	Pr	Joes	DR	DR	Ch	Hol D'n Draft
162	150	4½ x 5¾	6	2300	1125	Pr	Joes	DR	DR	Ch	Hol D'n Draft
163	150	4½ x 5¾	6	2300	1125	Pr	Joes	DR	DR	Ch	Hol D'n Draft
170	125	4¾ x 5¾	6	1800	1250	Pr	Joes	DR	DR	Ch	Hol D'n Draft
171	125	4¾ x 5¾	6	1800	1250	Pr	Joes	DR	DR	Ch	Hol D'n Draft
172	175	4¾ x 5¾	6	2300	1125	Pr	Joes	DR	DR	Ch	Hol D'n Draft
173	175	4¾ x 5¾	6	2300	1125	Pr	Joes	DR	DR	Ch	Hol D'n Draft
202	200	5 x 5¾	6	2300	1135	Pr	Joes	DR	DR	Ch	Hol D'n Draft
203	200	5 x 5¾	6	2300	1135	Pr	Joes	DR	DR	Ch	Hol D'n Draft
SPEEDWAY											
New York, N. Y.											
K	22–28	4 x 4½	4	1400	550	Spl	Own	Am Bo	Am Bo	Ra	Str
J	35–44	4½ x 5½	4	1200	850	Spl	Own	Bi	Am Bo	Ra	Str
M	48–75	5¾ x 7	4	1000	1950	Pr	Own	Bi	Bo & DR	Ra	Str
MP	155	5¾ x 7	6	1200	2025	Pr	Own	Bi	Bo & DR	Ra	Str
M	175–200	5¾ x 7	8	1200	2400	Pr	Own	Bi	Bo & DR	Ra	Str
MR	180	5¾ x 7	6	1300	2200	Pr	Own	Bi	Bo & DR	Ra	Str
M	100–175	5¾ x 7	8	1000	2900	Pr	Own	Bi	Bo & DR	Ra	Str
MP	135	5¾ x 7	6	1000	2025	Pr	Own	Bi	Bo & DR	Ra	Str
P	80–115	6¾ x 8½	6	600	4800	Pr	Own	Bi	Bo & DR	Ra	Str
R	300	7 x 8½	6	1200	4000	Pr	Own	Bi	Bo & DR	Ra	Str
STANDARD											
Jersey City, N. J.											
F-1	10–12	5 x 6½	2	450	850	Me	Own	Hand	M		Sch
F-3	16–18	6 x 8	2	400	1200	Me	Own	Hand	M		Sch
F-2	20–24	5 x 6½	4	450	1600	Me	Own	Hand	M		Sch
F-3	24–27	6 x 8	3	400	1800	Me	Own	Hand	M		Sch
F-4	32–37	6 x 8	4	400	2800	Me	Own	Hand	M		Sch
14	50–54	6 x 8	6	400	3200	Me	Own	Hand	M		Sch
12	65–75	8 x 10	4	400	5300	Me	Own	Hand	M		Sch
M-1	90–100	8 x 10	6	400	8000	Me	Own	Hand	M		Sch
	125–150	8½ x 11	6	400	5800	Me	Direct Rev	Air	M		Sch
	220	10 x 11	6	400	6300	Me	Direct Rev	Air	M		Sch

See page 84 for Key to Equipment Symbols

AMERICA'S LEADING MARINE ENGINES

MAKE AND MODEL	Horse Power	Bore & Stroke	No. of Cyl.	R.P.M.	Weight	Lubrication	Reverse Gear	Starting Device	Ignition System	Spark Plugs	Carburetor
STERLING											
Buffalo, N. Y.											
Neptune	15	5½ x 7	2	500	1150	Pr	Own	NE	NE	Ch	Sch
Chevron	85	5½ x 6¾	6	800	2710	Pr	Own	NE	NE	Ch	Sch
Chevron	130	5½ x 6¾	6	1200	2100	Pr	Own	NE	NE	Ch	Sch
Chevron	150	5½ x 6¾	6	1500	2100	Pr	Own	NE	NE	Ch	Sch
Dolphin, Med.	165	5¾ x 6¾	6	1200	2360	Pr	Own	NE	NE	Ch	Sch
Dolphin, Med.	220	5¾ x 6¾	8	1200	3500	Pr	Own	NE	NE	Ch	Sch
Dolphin	225	5¾ x 6¾	6	1550	2300	Pr	Own	NE	NE	Ch	Sch
Dolphin	300	5¾ x 6¾	8	1550	3500	Pr	Own	NE	NE	Ch	Sch
Dolphin, Spec.	200	5¾ x 6¾	6	1950	2275	Pr	Own	NE	NE	Ch	Sch
Petrel	125	4⅞ x 6	6	1500	1350	Pr	Own	NE	NE	Ch	Sch
Petrel	115	5¼ x 6	6	1200	1500	Pr	Own	NE	NE	Ch	Sch
Petrel	145	5¼ x 6	6	1500	1500	Pr	Own	NE	NE	Ch	Sch
Petrel	180	5¼ x 6	6	1800	1500	Pr	Own	NE	NE	Ch	Sch
Petrel	200	5¼ x 6	6	2100	1500	Pr	Own	NE	NE	Ch	Sch
Petrel—Red. Gear	190	5¼ x 6	6	675	2830	Pr	Own	NE	NE	Ch	Sch
Coast Guard	225	6¼ x 7¾	6	1200	4100	Pr	Own	NE	NE	Ch	Sch
Coast Guard	300	6¼ x 7¾	6	1500	3520	Pr	Own	NE	NE	Ch	Sch
Viking II	190	8 x 9	6	600	6950	Pr	Joes	NE	NE	Ch	Sch
Viking II	300	8 x 9	6	900	6950	Pr	Joes	NE	NE	Ch	Sch
Viking II	425	8 x 9	6	1200	6950	Pr	Joes	NE	NE	Ch	Sch
Viking II	250	8 x 9	8	600	8500	Pr	Joes	NE	NE	Ch	Sch
Viking II	400	8 x 9	8	900	8500	Pr	Joes	NE	NE	Ch	Sch
Viking II	565	8 x 9	8	1200	8500	Pr	Joes	NE	NE	Ch	Sch
20TH CENTURY											
Morris Heights, N. Y.											
60	60	6½ x 8½	4	500	3400	Pr	Joes	LN	Fo	Ch	Str
100	100	6½ x 8½	6	600	4500	Pr	Joes	LN	Bo	Ch	Str
UNITED STATES											
Oshkosh, Wis.											
Falcon 5	5	3¾ x 4½	1	1000	215	Spl	Par	Hand	Bo or Wi M	Ch	Til
Falcon 10	10	3¾ x 4½	2	1000	320	Spl	Par	Hand or Au	AK or Mor Au	Ch	Til
Falcon 15	10–15	2½ x 3½	4	2400	268	Pr	Par	NE	AK or Mor NE	Ch	Til
Falcon 40	40	3½ x 4¾	4	2300	425	Pr	Par	Au	Au	Ch	Til
Falcon 50	50	3¼ x 3⅞	6	3000	575	Pr	Par	Au	Au	Ch	Til
UNIVERSAL											
Oshkosh, Wis.											
Blue Jacket	45	3 x 3½	4	4000	300	Pr	Joes	Au	Au	Ch	Str
*Flexifour N	15	2⅝ x 4	4	2000	373	Pr	Own	Cr & Au	B & M	Ch	Str
*Superfour GLS-Med.	35	3¼ x 4½	4	2400	425	Pr	Joes	Au	B & M	Ch	Str
*Superfour GLH-High Sp.	45	3¼ x 4½	4	3000	425	Pr	Joes	Au	B & M	Ch	Str
Superfour GLR—Racing	50	3¼ x 4½	4	3000	300	Pr	None	Hand	B & M	Ch	Zen
*WM	8	4⅝ x 4	1	1200	275	Cir & Spl	Joes	Hand	Wico	Ch	Til
*6-77	77	3½ x 4½	6	2700	635	Pr	Joes	Au	B & M	Ch	Str
*6-88	88	3½ x 4½	6	3000	635	Pr	Joes	Au	B & M	Ch	Str
*8-115	115	3½ x 4½	8	3000	700	Pr	Joes	Au	B & M	Ch	Str
AB	45	3 x 3½	4	4000	300	Pr	Joes	Au	B & M	Ch	Str
W	8	4⅝ x 4½	1	1200	295	Spl	Joes	.....	M	Ch	Til
VAN BLERCK JUNIOR											
Red Bank, N. J.	25	2⅝ x 3½	4	3000	165	Pr	Joes	Au	Au	AC	Til
WINTON											
Cleveland, Ohio											
W6	80	6½ x 9	6	500	5900	Pr	Own	Air	R Bo	.....	Zen, Sch or Str
W5	125	8 x 11	6	450	10000	Pr	Own	Air	R Bo	.....	Zen, Sch or Str
11	200	9½ x 14	6	425	19000	Pr	Own	Air	R Bo	.....	Zen, Sch or Str
106-A	250	7¾ x 8	6	1200	5000	Pr	Joes	Air or LN	R Bo	.....	Zen, Sch or Str
124-6	180	6 x 7	6	1300	2600	Pr	Joes	Air or LN	R Bo	.....	Zen, Sch or Str
124-4	120	6 x 7	4	1300	1950	Pr	Joes	Air or LN	R Bo	.....	Zen, Sch or Str
120-6	350	7½ x 8½	6	1350	5000	Pr	Joes	Air or LN	R Bo	.....	Zen, Sch or Str
120-8	500	7½ x 8½	8	1300	6100	Pr	Joes	Air	R Bo	.....	Zen, Sch or Str
130-6	375	8 x 10	6	1100	8000	Pr	Joes	Air	R Bo	.....	Zen, Sch or Str
130-8	500	8 x 10	8	1100	10423	Pr	Joes	Air	R Bo	.....	Zen, Sch or Str
154-12	700	7½ x 8½	12	1300	11800	Pr	Joes	Air	R Bo	.....	Zen, Sch or Str
GAR WOOD											
Detroit, Mich.											
T-30	425	5 x 7	12	1950	1500	Pr	Joes	Own	DR	Ch	Zen
TS-30	525	5 x 7	12	2150	1550	Pr	Joes	Own	DR	Ch	Zen
WRIGHT											
Paterson, N. J.											
TM5 (4.8-1)	500	5¾ x 6¼	12	1900	1860	Pr	Own	LN	Dual-SeM	BGIXB	Str
TM5 (5.3-1)	575	5¾ x 6¼	12	2000	1860	Pr	Own	LN	Dual-SeM	BGIXB	Str
TM5 (6.5-1)	650	5¾ x 6¼	12	2000	1860	Pr	Own	LN	Dual-SeM	BGIXB	Str

*Can be furnished with reduction gear.

AK—Atwater Kent
Au—Autolite
Be—Bethlehem
Bo—Bosch
Bi—Bijur
B—Battery
Car—Carlyle
Ch—Champion
Cir—Circulation
Cr—Crank
DR—Delco-Remy
Dis—Distributor
Dr—Drip
Dy—Dyneto
Ei—Eisemann
El—Electric
Gr—Gravity
HD—Heavy Duty
HS—High Speed
Hol—Holley
John—Johnson

Key to Equipment Symbols

Kn—Kingston
LN—Leece Neville
M—Magneto
May—Mayer
Ma. & Br.—Make and Break
Me—Mechanical Oiler
Mil—Miller
McC—McCord
NE—North East
Opt—Optional
Par—Paragon
Pr—Pressure
Pu—Pump
Ra—Rajah
Se—Scintilla
Sch—Schebler
Spec—Special
Spl—Splash
Sd—Splitdorf
Ster—Sterling
St—Stewart
Str—Stromberg
Til—Tillotson
Wi—Wico
Zen—Zenith

ELCO OPENS BOSTON OFFICE

Boston now has one of the few down-town motor cruiser exhibit rooms in the United States.

The Elco Boat Works of Bayonne, New Jersey, builders of the wellknown fleet of standardized motor cruisers flying the Elco insignia, has just opened a direct factory branch and show room in the heart of the Hub city, in the Cunard Building, at the intersection of State and Broad Streets. March fifteenth was the date of the official opening.

With spacious window display space, the exhibit room houses two ducks out of water, the Elco twenty-seven foot Marinette and a thirty-five foot Cruisette or a thirty foot Veedette. Although only these two boats are on exhibit, the entire Elco fleet, consisting of six cabin cruisers, will be handled.

Gleason Buckley, a native of Winchester, Massachusetts, who has had nearly ten years' experience in building, servicing and selling Elco cruisers, is in charge of the new factory branch. He comes to Boston direct from the Bayonne, New Jersey, plant, where he has been connected with the storage, overhaul, sales, demonstration, and instruction activities of the Elco Works. Buckley is an enthusiastic yachtsman himself, and is familiar with the entire Atlantic Seaboard, from Eastport, Maine, to Tampa, Florida.

LEADING DIESEL ENGINES

MODEL	Horse Power	Bore and Stroke	No. of Cyls.	R.P.M.	Weight	*Lubrication Method	*Reverse Gear	*Starting Device
BUDA-M. A. N.								
Harvey, Ill.								
DM-6-30	180	6½ x 8¾	6	1000		Pr		El
COOPER-BESSEMER								
Grove City, Pa.								
EP-6	200	7½ x 10½	6	670	10400			Air
EP-8	275	7½ x 10½	8	670	12400			Air
FP-4	135	9 x 12	4	400	11000			Air
FP-6	300	9 x 12	6	600	15000			Air
FP-8	400	9 x 12	8	600	18800			Air
GP-8	230	9½ x 14	6	300	29900			Air
G-6	400	11 x 14	6	475	35500			Air
JR-6	550	11 x 14	8	475	42500			Air
JR-8	675	14 x 18	6	375	74000			Air
KR-6	900	14 x 18	8	375	84500			Air
KR-8	800	16 x 20	6	300	99000			Air
LR-6	1060	16 x 20	8	300	125000			Air
LR-8	1125	18 x 22	6	300	120000			Air
MR-6	1500	18 x 22	8	300	160000			Air
CUMMINS								
Columbus, Ind.								
U	10	4½ x 6	2	1000	1650	Pr	Joes	El
U	30	4½ x 6	3	1000	2075	Pr	Joes	El
U	40	4½ x 6	4	1000	2350	Pr	Joes	El
U	60	4½ x 6	6	1000	2900	Pr	Joes	El
U	12½	5½ x 7½	1	600	1850	Pr	Joes	Air
F	25	5½ x 7½	2	600	2550	Pr	Joes	Air
F	37½	5½ x 7½	3	600	3325	Pr	Joes	Air
F	55	5½ x 7½	4	700	3900	Pr	Joes	Air
P	100	6¾ x 9	4	700	6600	Pr	Joes	El or Air
K	170	6¾ x 9	6	800	8280	Pr	Joes	El or Air
FULTON								
St. Louis, Mo.								
L	100	8½x11	3-4	600	11100	Pr	Joes	Air
L	132	8½x11	4	600	13000	Pr.	Joes	Air
L	166	8½x11	5	600	14980	Pr.	Joes	Air
L	200	8½x11	6	600	15800	Pr.	Joes-Rev	Air
L	265	8½x11	8	600	18540	Pr.	Rev.	Air
RR	195	13½x18	3	300	35000	Pr.	Joes	Air
RR	260	13½x18	4	300	42000	Pr.	Joes	Air
RR	325	13½x18	5	300	49000	Pr.	Joes	
RR	390	13½x18	6	300	55000	Pr.	Rev	
RR	520	13½x18	8	300	65000	Pr.	Rev	
HILL-DIESEL								
Lansing, Mich.								
PRM	12½	5 x 7	1	1000	1600	Pr	Joes	Hand or El
PRM	25	5 x 7	2	1000	2000	Pr	Joes	Hand or El
PRM	37½	5 x 7	3	1000	2400	Pr	Joes	Air or El
PRM	50	5 x 7	4	1000	2800	Pr	Joes	Air or El
PRM	75	5 x 7	6	1000	4000	Pr	Joes	Air or El
PAM	80	6 x 10	4	800	5400	Pr	Joes	Air
PAM	120	6 x 10	6	800	7400	Pr	Joes	Air
MAYBACH-ZEPPELIN								
New York, N. Y								
GA	150	5½ x 7⅛	6	1300	2650	Pr	Own	Air
GB	150	5½ x 7⅛	6	1300	2250	Pr	Own	Air
NELSECO								
Groton, Conn.								
MI-15	250	10½ x 15	6	350	26400	Pr	Rev	Air
MI-18	350	12½ x 18	6	280	40200	Pr	Rev	Air
MI-22	550	15 x 22	6	250	77000	Pr	Rev	Air
MI-53	1000	20⅞ x 20⅞	6	250	154000	Pr	Rev	Air
GV-54	600	16½ x 24	6	205	120000	Pr	Rev	Air
SPEEDWAY								
New York, N. Y.								
D	300	8½ x 11	6	700	7600	Pr	Rev	Air
STANDARD								
Jersey City, N. J.								
AE-4	60	6 x 8	4	650	3800	Pr	Rev Gear	El or Air
AE-6	90	6 x 8	6	650	5000	Pr	Direct Rev & Gear	Air
AI-3	75	8½ x 12	3	350	9000	Pr	Direct Rev	Air
AI-4	100	8½ x 12	4	350	10500	Pr	Direct Rev	Air
AI-6	150	8½ x 12	6	350	13500	Pr	Direct Rev	Air
AN-6	2?0	10 x 14	6	300	20000	Pr	Direct Rev	Air
AQ	330	12 x 17	6	300	38000	Pr	Direct Rev	Air
QQ	330	12 x 17	6	275	56000	Pr	Direct Rev	Air
13½QQ	400	13½ x 17	6	275	60000	Pr	Direct Rev	Air
TREIBER								
Camden, N. J.								
CR-4	65	5 x 7	4	1200	1800	Pr	Plan. Mult. Disc	El
DR-4	100	6 x 8	4	1000	2300	Pr	Plan. Mult. Disc	El
CR-6	100	5 x 8	6	1200	2200	Pr	Plan. Mult. Disc	El
DR-6	150	6 x 8	6	1000	2800	Pr	Plan. Mult. Disc	El
DR-12	300	6 x 8	12-V	1000	3800	Pr	Plan. Mult. Disc	El
ER-4	150	7½ x 9½	4	900	4500	Pr	Plan. Mult. Disc	El
ER-6	225	7½ x 9½	6	900	5500	Pr	Plan. Mult. Disc	El

*KEY TO SYMBOLS

El.—Electric Pr.—Pressure Rev.—Reversible

LEADING DIESEL ENGINES

MODEL	Horse Power	Bore and Stroke	No. of Cyls.	R.P.M.	Weight	*Lubrication Method	*Reverse Gear	*Starting Device
TREIBER (Continued)								
Camden, N. J.								
ER-12	450	7¼ x 9½	12-V	900	6000	Pr	Plan. Mult. Disc	El
E	2?5	7½ x 9½	6	900	4500	Pr	Rev	Air
F	300	8½ x 11	6	700	7500	Pr	Rev	Air
G	3?5	9½ x 12	6	700	10000	Pr	Rev	Air
H	5?0	10½ x 13	6	700	14000	Pr	Rev	Air
I	600	11½ x 14	6	650	16500	Pr	Rev	Air
K	700	12½ x 15	6	600	19?00	Pr	Rev	Air
L	1500	16 x 18	6	700	45000	Pr	Rev	Air
FV	600	8½ x 11	12-V	750	1u5?0	Pr	Rev	Air
GV	7?0	9½ x 12	12-V	700	1?600	Pr	Rev	Air
HV	1000	10½ x 13	12-V	700	20?00	Pr	Rev	Air
IV	1200	11½ x 14	12-V	650	24?00	Pr	Rev	Air
KV	1400	12½ x 15	12-V	600	2?000	Pr	Rev	Air
MV	3000	16 x 16	12-V	700	63200	Pr	Rev	Air
WINTON (Airless Injection)								
Cleveland, Ohio								
144-3	75	7 x 8½	3	750	3350	Pr	Own	Air
144-4	100	7 x 8½	4	750	4500	Pr	Own	Air
144-6	150	7 x 8½	6	750	5700	Pr	Own	Air
138-6	225	8 x 10	6	700	7340	Pr	Dir Rev	Air
138-8	300	8 x 10	8	700	9000	Pr	Dir Rev	Air
141-6	1?5	8½ x 11	6	450	10000	Pr	Dir Rev	Air
155-6	300	7½ x 12	6	700	9000	Pr	Dir Rev	Air
152-8	400	8½ x 12	8	700	12000	Pr	Dir Rev	Air
133-6	275	10 x 14	6	400	20700	Pr	Dir Rev	Air
133-8	365	10 x 14	8	400	27000	Pr	Dir Rev	Air
149-6	375	11 x 15	6	450	33500	Pr	Dir Rev	Air
149-8	500	11 x 15	8	450	29500	Pr	Dir Rev	Air
158-6	600	14 x 16	6	450	43000	Pr	Dir Rev	Air
158-8	800	14 x 16	8	450	55000	Pr	Dir Rev	Air
163-6	430	14 x 18	6	275	60000	Pr	Dir Rev	Air
163-8	570	14 x 18	8	275	75000	Pr	Dir Rev	Air
157-6	800	16½ x 26	6	250	105000	Pr	Dir Rev	Air
157-8	1100	16½ x 26	8	250	135000	Pr	Dir Rev	Air
164-6	500	14½ x 21	6	250	65000	Pr	Dir Rev	Air
164-8	650	14½ x 21	8	250	82000	Pr	Dir Rev	Air
165-12	500	8 x 10	12	750	15000	Pr	Dir Rev	Air
165-16	650	8 x 10	16	750	18000	Pr	Dir Rev	Air
WINTON (Air Injection)								
Cleveland, Ohio								
114G	150	8 x 11	6	450	13500	Pr	Own	Air
114	150	8 x 11	6	450	13000	Pr	Dir Rev	Air
117	175	8½ x 11	6	450	13000	Pr	Dir Rev	Air
111	200	9½ x 14	6	350	21000	Pr	Dir Rev	Air
116	300	10 x 14	6	450	21000	Pr	Dir Rev	Air
121	400	14 x 18	6	250	67000	Pr	Dir Rev	Air
145	430	14 x 18	6	275	50000	Pr	Dir Rev	Air
115A	600	14 x 16	6	450	40000	Pr	Dir Rev	Air
115A-8	800	14 x 16	8	450	56?00	Pr	Dir Rev	Air
125	800	16½ x 22	6	300	110000	Pr	Dir Rev	Air
128	800	16½ x 26	6	250	110000	Pr	Dir Rev	Air
128-8	1000	16½ x 26	8	250	140000	Pr	Dir Rev	Air
128A-6	850	17 x 26	6	250	120000	Pr	Dir Rev	Air
128A-8	1100	17 x 26	8	250	160000	Pr	Dir Rev	Air

***KEY TO SYMBOLS**

El.—Electric Pr.—Pressure Rev.—Reversible

JERSEY DRIVERS BAN PROS

Professionals will be strictly upon the sidelines at the sixteen regattas of the South Jersey Speedboat Association, announced recently. The schedule is the best in the history of South Jersey outboard racing.

The ruling against pro drivers was taken by the newly organized outboard drivers division of the Mays Landing Speedboat Association, consisting of more than fifty of the leading racing drivers of Southern New Jersey, southeastern Pennsylvania, and Delaware. They are all amateurs and voted to remain out of all regattas in which pros compete.

Rules of the American Power Boat Association will be strictly adhered to by the Association, excepting as to classes. There will be only two divisions; Division I for drivers who have not competed in more than 15 races, and will be for Class A and Class B type outboards only. Division II will be for all other amateur drivers, and will be for all five classes of boats, A, B, C, D, and E. All boats will carry a large registration number, and will be strictly weighed.

The pilot boat system of starting will not be in use this year at South Jersey regattas, but in its place the clock start will be adopted. No gun or flag will be used. If boats start ahead of the clock they will be disqualified unless they run back and start again. A measured mile will be used for all speed tests.

The season will open at Mays Landing on Memorial Day. The wonderful success of last years' regatta there played a big part in putting the entire season across. Mays Landing also drew the closing date on the schedule for its annual 50-mile outboard marathon race on Lake Lenape.

Stone Harbor again requested dates for a two-day regatta, and hopes to stage the most succesful event in its series. Atlantic City drew three dates on the schedule, in addition to one each for Brigantine, Ocean City, Somers Point, and Margate-Longport.

U. S. NAVY BUYS DART BOATS

The U. S. Navy has just placed an order for four 26-foot Darts to be placed in service at the four Naval Air Stations at Annapolis, Chicago, Boston and Washington.

These boats are to be equipped with a 200 h. p. Kermath motor and will be capable of making 45 miles per hour.

They are known in the service as crash boats, their purpose being to dash out to the assistance of a plane in distress on the water. Government regulations stress speed, reliability and seaworthiness and these boats passed every test with flying colors.

They are standard stock models in every detail with the exception that one-half of the seat in the forward cockpit is cut away to make room for the placing of a stretcher.

SCRIPPS FILLING MANY ORDERS

Steady and continued activity in the marine engine field is predicted by the Scripps Motor Company, Detroit, whose books at the present date reveal more orders to be filled than at any previous time in the company's history. In the matter of actual shipments, the company reports that the last three months have far exceeded any similar period in the organization's existence.

With a peak payroll, and with the plant working at capacity, the company sees little indication of the general depression that was predicted following stock market disturbances. Neither has there been the seasonal interruption that usually takes place in this industry during the late fall and early winter months; and there is every indication, the company asserts, that a steady active situation will continue throughout its current fiscal year.

Scripps motors are being installed in many standardized craft as standard or optional equipment, so that activity in the engine field reflects activity throughout the entire range of marine affairs.

SPECIFICATIONS OF OUTBOARD BOATS

Name or Number of Model	Type of Bottom, Vee, Round or Step	Price	Length Feet	Beam Feet	Weight	Material and Size of Frames	Material Planking	Persons Carried	SPEED CLAIMED WITH MOTOR				*Equipment
									Class A	Class B	Class C	Class D	
ACO SEABOAT													
New York, N. Y.													
Sea Nymph	Round	785	15-11	5-2½	480	Oak ⅝ x ⅝	Mahogany	5	.....	.....	23	28	CEFHLPWX
ASHBRIDGE													
Wilmington, Calif.													
Light Racer A	Semi Stepless	179	9-9	3-8	72	Spruce	Veneer	.....	.....	.....	.....	.....	A
Light Racer B	Semi Stepless	179	11-9	4-0	79	Spruce	Veneer	2	30	42	42	42	A
Light Racer C	Semi Stepless	179	11-9	4-0	79	Spruce	Veneer	2	.....	41	43	45	A
Light Racer D	Semi Stepless	179	11-9	4-3	98	Spruce	Veneer	2	.....	36	42	47	A
Heavy Racer A	Semi Stepless	179	9-9	3-8	100	Spruce	Veneer	1	29	42	.....	.....	A
Heavy Racer B	Semi Stepless	198	11-9	3-11	150	Spruce	Veneer or Mahog.	2	.....	40	41	.....	A
Heavy Racer C	Semi Stepless	198	11-9	3-11	150	Spruce	Veneer or Mahog.	.....	.....	.....	.....	.....	A
Heavy Racer D	Semi Steeless	198	11-9	4-3	190	Spruce	Veneer or Mahog.	3	.....	.....	.....	45	A
Combination Skiff	Round Flat	98	14	4-0	195	Spruce	⅛ Spruce & ½ Fir	5	20	30	34	38	A
Runabout	Vee	275	14-0	4-11	275	Spruce	½ Mahog. or Cedar	6	16	26	30	34	A
Runabout DeLuxe	Vee	495	16-0	4-8	375	Spruce	½ Mahogany	6	.....	24	28	32	ACX
Runabout DeLuxe	Vee	555	18-0	4-11	475	Spruce	.....	8	.....	.....	25	29	ACX
BECKHARD													
Flushing, N. Y.													
Thisbe	Step	.....	12-6	.....	.....	.....	Mahogany	1	.....	.....	.....	.....	
Daytona	Biplane	.....	14-0	4-8	190	.....	Mahogany	4	.....	.....	.....	.....	CFLX
St. Pete	Biplane	.....	16-0	5-0	350	.....	Mahogany	4	.....	.....	.....	.....	CFLX
Floatboat	Punt	.....	8-0	4-0	50	.....	Mahogany	2	15	30	45	.....	
BOBILIN													
Fort Plain, N. Y.													
C Skipper	Round	190	16-0	4-6	225	½ x ⅞ Oak	Cedar	7	.....	18	24	30	CLX
Skipper	Round	175	16-0	4-4	200	½ x ⅞ Oak	Cedar	6	.....	20	25	.....	CLX
Fisherman's Pal No. 1	Flat	40	12-0	3-2	150	Spruce	Cedar	3	10	.....	.....	.....	
Fisherman's Pal No. 2	Flat	45	14-0	3-6	175	Spruce	Cedar	4	8	15	.....	.....	
Fisherman's Pal No. 3	Flat	50	16-0	3-9	200	Spruce	Cedar	5	7	14	18	.....	
BOYD-MARTIN													
Delphi, Ind.													
Bullet Junior	Step	250	12-0	5-0	150	⅝ x 2 Mahogany	Mahogany	1	.....	43	45	.....	XC
Bullet Senior	Step	275	12-0	5-0	195	⅝ x 2 Mahogany	Mahogany	1	.....	.....	.....	50	XC
Kingfisher Junior	Round	225	14-0	4-4	230	1¼ x ⅝ Oak	Cypress	6	11	18	20	.....	O
Kingfisher Senior	Round	250	16-0	5-0	225	1¼ x ⅝ Oak	Cypress	8	9	15	18	20	O
Barbara	Round	275	18-0	5-4	275	1¼ x ⅝ Oak	Cypress	8	9	15	18	25	O
Mercury	Vee	375	16-0	5-0	365	⅞ x 2 Mahogany	Mahogany	8	.....	20	25	30	
Commodore	Vee	565	16-0	5-0	475	⅞ x 2 Mahogany	Mahogany	6	.....	20	25	30	XLCFP
BUCKHOUT													
Poughkeepsie, N. Y.													
18 Runabout	Vee	.....	18-0	5-0	550	⅞x2¼ Mahogany	Mahogany	6	.....	.....	.....	.....	CEFHJLPWX
18 Sedan	Vee	.....	18-0	5-0	670	⅞x2¼ Mahogany	Mahosgny	6	.....	.....	.....	.....	CEFGJLPWX
CRANDALL CRAFT													
Newport Beach, Cal.													
Comet	Step	265	10-10	4-0	150	⅝ Spruce	⅝ Mahogany	2	.....	42	.....	.....	AB
Comet D & E	Step	.....	12-0	4-5	200	⅝ x 3 Spruce	⅝ Mahogany	2	.....	.....	.....	.....	ABCD
Crandall Craft 15	Vee Round	.....	15-0	4-3	.....	½ x 1¼ Oak	⅞ Cedar	6	15	22	.....	.....	A
Double Cockpit 15½	Vee	585	15-10	4-9	500	¾ x 3 Spruce	⅜ & ⅞ Mahogany	5	.....	18	24	27	ABCDL
Single Cockpit 15½	Vee	485	15-10	4-9	475	¾ x 3 Spruce	⅜ & ⅞ Mahogany	8	.....	18	24	27	L
Double Cockpit 19	Vee	985	19-7	5-2	700	⅞ x 3½ Spruce	⅜ & ½ Mahogany	5	.....	.....	.....	24	ABCDELP
Sedan 19	Vee	995	19-7	5-2	750	⅞ x 3½ Spruce	⅜ & ½ Mahogany	6	.....	.....	.....	24	ABDELP
CROUCH													
Middletown, Conn.													
Harpoon	Round	345	16-0	4-6	225	Oak	Cedar	6	.....	24	30	38	
Sportsman	Round	250	16-0	4-6	175	Oak	Cedar	6	.....	26	33	40	
Split 2nd	Step	250	11-0	4-0	100	Spruce	Mahogany	1	.....	.....	.....	.....	
CUTE CRAFT													
Fall River, Mass.													
Bi-Plane	Concave	140	8-6	3-10½	110	¾ Spruce	Mahogany	2	26	42	40	.....	
Meteor	Step	275	11-4	4-0	140	¾ Spruce	Mahogany	2	42	40	46	.....	AB
Sea Horse	Step	425	14-9	4-0	265	¾ Ash	Mahogany	4	.....	20	37	42	ABCFL
DARROW													
Albion, Mich.													
De Luxe Launch 160	Flat	150	16-0	4-2	295	.....	Steel	8	.....	.....	.....	.....	
De Luxe Launch 140	Flat	130	14-0	3-10	200	.....	Steel	6	.....	.....	.....	.....	
Darrow Plane 800	.....	90	10-0	.....	75	Cypress & Oak	Steel	.....	.....	.....	.....	.....	
DEBASCO													
Philadelphia, Pa.													
Champion	Step	250	12-0	4-3	150	1 Spruce	Mahogany	.....	.....	.....	40	45	
Junior	Step	225	10-0	3-11	130	1 Spruce	Mahogany	.....	.....	40	40	.....	
DEE WITE													
Detroit, Mich.													
I-D	Vee	535	16-0	4-6	575	Oak	Mahogany	6	.....	.....	20	25	ABCDFLPX
HACKNEY													
Wilson, N. C.													
Cabin Cruiser	Vee	750	18-0	5-0	750	¾ Cedar	½ Cedar	6	.....	.....	.....	28	CEFHLPX
Trap Stern Runabout	Vee	400	18-0	4-6	400	¾ Cedar	½ Cedar	6	.....	.....	.....	28	CEFHLPX
Open Stern Runabout	Vee	375	16-0	4-6	375	½ Oak	½ Cedar	5	.....	.....	.....	30	CEFHLPX
Open Stern Runabout	Vee	350	14-0	4-6	350	½ Oak	½ Cedar	4	.....	.....	.....	30	CEFHLPX
HOOTON													
Holland, Mich.													
Wildcat Runabout	Step	180	9-9	3-4	102	½ x 2½ Spruce	¼ Mahogany	1	33	42	.....	.....	
Wildcat Racer	Step	220	11-6	3-10	150	¾ x 3½ Spruce	⅜ & ¼ Mahogany	3	.....	40	47	52	
Safety-Plane Runabout	Step	260	11-6	3-10	165	¾ x 3½ Spruce	⅜ & ¼ Mahogany	1	.....	40	47	52	A
Safety-Plane Racer	Step	280	13-6	4-0	220	¾ x 3½ Spruce	⅜ Mahogany	4	.....	37	44	49	C
Vee-Plane Runabout	Step	320	13-6	4-0	195	¾ x 3½ Spruce	¼ Mahogany	1	.....	38	45	50	A
Vee-Plane Runabout	Vee	380	15-3	4-4	290	¾ x 3½ Spruce	⅜ Mahogany	5	.....	24	30	36	ACDLF
Rounter	Round	265	15-0	4-8	280	⅝ x ⅞ Oak	⅞ Cedar	6	16	20	24	28	O

*** Key to Equipment Symbols**

A—Steering Wheel; B—Remote Control; C—Cushions; D—Windshield; E—Fire Extinguisher; F—Flag Staff; H—Boat Hook; J—Life Jackets; O—Oars; L—Running Lights; P—Pump; W—Whistle; X—Paddle

SPECIFICATIONS OF OUTBOARD BOATS

Name or Number of Model	Type of Bottom, Vee, Round or Step	Price	Length Feet	Beam Feet	Weight	Material and Size of Frames	Material Planking	Persons Carried	SPEED CLAIMED WITH MOTOR				*Equipment
									Class A	Class B	Class C	Class D	
INDIAN BOAT CO.													
Lima, Ohio													
Flying Indian B	Step	225	12-0	4-0	150	5/8 x 2 Spruce	Mahogany	1	.....	42	45	.....	CX
Flying Indian C	Step	250	13-0	4-2	175	5/8 x 2 Spruce	Mahogany	1	.....	.....	45	47	CX
Indian Skimmer	Vee	175	12-0	3-8	130	5/8 x 2 1/2 Spruce	Cedar	4	20	30	.....	.....	X
Indian Speedster	Vee	245	12-0	3-10	180	5/8 x 2 1/2 Spruce	Mahogany	4	18	27	.....	.....	FLX
Indian Chief	Vee	285	15-6	4-0	220	3/4 x 2 1/2 Spruce	Mahogany	6	.....	14	22	27	X
Indian Big Chief	Vee	345	16-0	4-2	265	3/4 x 2 1/2 Spruce	Mahogany	6	.....	12	20	25	LFX
JOHNSON													
Waukegan, Ill.													
Aquaflyer 20	Round—Step	1065	20-0	.....	.....	.....	Mahogany-Prestite	.....	.....	.....	.....	20	SeaHorse 32 ACL
Aquaflyer De Luxe		925-995	18-0	5-0	.....	.....	Sealite	.....	.....	19	.....	25	SeaHorse 16 or 32
Service Runabout	Vee	485	18-0	5-0	.....	.....	Sealite	.....	.....	20	.....	25	CU
Utility B	Vee	275	15-0	.....	.....	.....	Sealite	.....	.....	22	.....	.....	
Utility A	Round	165	14-0	.....	.....	.....	Sealite	.....	.....	.....	.....	.....	
Family Boat	Round	135	15-0	.....	.....	.....	.....	8	.....	.....	.....	.....	
KEYSTONE													
Darby, Pa.													
Yacht Tender	Round	125	9-0	3-10	108	5/8 x 3/4 Oak	Cedar	3	.....	.....	.....	.....	
Yacht Tender	Round	135	10-0	4-0	120	5/8 x 3/4 Oak	Cedar	4	.....	.....	.....	.....	
Fishing Tender	Round	165	12-0	4-2	144	1/2 x 3/4 Oak	Cedar	5	.....	.....	.....	.....	
General Purpose Tender	Round	175	14-0	4-2	160	1/2 x 3/4 Oak	Cedar	6	.....	.....	.....	.....	
Runabout	Round	295	14-0	4-2	200	1/2 x 3/4 Oak	Cedar	4	.....	.....	.....	.....	L
Kollegiate—Sea Skiff	Round	350	14-0	4-6	300	1/2 x 3/4 Oak	Cedar	6	.....	.....	.....	.....	L
Sea Scout	Flat	65	12-0	3-10	140	.....	Cedar	3	.....	.....	.....	.....	
KIDNEY													
West De Pere, Wis.													
Flash	Step	85	10-4	4-0	.....	Oak & Spruce	Cedar	.....	.....	.....	.....	40	
Family Runabout	Vee	192 up	(16-0 (17-0	4-0) 4-6/	200 up	Oak & Spruce	Cedar or Mahog.	.....	.....	.....	.....	.....	O
Aristocrat	Vee	375	18-0	4-6	.....	Oak & Spruce	Mahogany	.....	.....	.....	.....	35	C
Fox Step Racer	Step	160 up	(12-9) (14-0)	3-10	130	Spruce	Cedar	.....	.....	.....	.....	37	
Badger Queen	Step	160 up	10-0	3-6	120	Spruce	Cedar or Mahog.	.....	.....	.....	.....	.....	
LUDINGTON													
Philadelphia, Pa.													
Lightning	Hydro	240	11-6	3-10	100	Spruce	3/8 Veneer	1	35	.....	.....	.....	AB
Rocket	Hydro	260	13-6	4-0	150	Spruce	5/8 Veneer	.....	.....	45	45	.....	AB
Flash	Hydro	310	14-0	4-4	190	Spruce	5/8 Veneer	.....	.....	.....	50	50	AB
LYMAN													
Sandusky, Ohio													
8 Speed Tender	Round	.....	8-0	4-0	115	Oak	Cypress	4	.....	.....	.....	.....	O
9 Speed Tender	Round	.....	9-0	4-6	130	Oak	Cypress	5	.....	.....	.....	.....	O
10 Speed Tender	Round	.....	10-0	4-6	145	Oak	Cypress	5	.....	.....	.....	.....	O
11 Speed Tender	Round	.....	11-0	4-6	160	Oak	Cypress or Mahog.	6	.....	.....	.....	.....	O
13 Open Sea Skiff	Round	.....	13-0	4-8	200	Oak	Cypress or Mahog.	5	.....	.....	.....	.....	O
15 Open Sea Skiff	Round	.....	15-0	4-8	225	Oak	Cypress or Mahog.	6	.....	.....	.....	.....	O
13 Speed Runabout	Round	.....	13-0	4-8	260	Oak	Mahogany	5	.....	.....	.....	.....	O
15 Speed Runabout	Round	.....	15-0	5-0	325	Oak	Mahogany	6	.....	.....	.....	.....	AX
15 De Luxe Sp. Runabout	Round	.....	15-0	5-0	450	Oak	Mahogany	6	.....	.....	.....	.....	ACXL
17 De Luxe Sp. Runabout	Round	.....	17-0	5-8	600	Oak	Mahogany	8	.....	.....	.....	.....	ACXL
MULLINS													
Salem, Ohio													
Lark	Round	170	14-0	4-4	270	1/2 x 1 1/4 Oak	Galv. Iron	5	10	.....	.....	.....	
Dolphin	Vee	297	15-0	4-8	400	1/8 x 5 Spruce	G. I. & Stainless St'l	6	.....	25	30	33	
Albatross	Vee	390	15-0	4-8	475	1/8 x 5 Spruce	G. I. & Stainless St'l	6	.....	25	30	33	
Flamingo	Vee	550	15-0	4-8	500	1/8 x 5 Spruce	G. I. & Stainless St'l	6	.....	25	30	33	AC
Roadster	Vee	495	15-0	4-9	395	1/8 x 5 Spruce	G. I. & Stainless St'l	3	.....	25	30	35	AC
Torpedo	Step	400	13-6	4-3	200	1/8 x 4 1/2 to 6 1/2 Spruce	G. I. & Stainless St'l	1	.....	35	40	45	AC
Tarpon	Step	475	13-6	4-3	225	1/8 x 4 1/2 to 6 1/2 Spruce	G. I. & Stainless St'l	3	.....	35	40	45	AC
OLD TOWN													
Old Town, Me.													
Sea Model—Canvas	Vee	160-175	16-0	4-0	210	Cedar	Cedar	7	.....	15	20	.....	
Sea Model—Wood	Vee	160	14-0	4-0	200	Oak	Cedar	7	.....	15	22	.....	
Sea Model—Wood	Vee	175	16-0	4-2	260	Oak	Cedar	7	.....	14	20	25	
Sea Model—Wood	Vee	230	18-0	4-8	325	Oak	Cedar	8	.....	10	16	20	
Baby Buzz	Vee	230	16-0	4-3	230	Cedar	Cedar	5	.....	20	25	30	
Raceplane	Vee	225	11-8	3-10	140	Spruce	Mahogany	3	.....	35	40	.....	
Square Stern	Vee	100-115	16-0	3-8	165	Cedar	Cedar	8	11	18	.....	.....	
Square Stern—Sponson	Vee	120-135	16-0	4-2	190	Cedar	Cedar	8	10	17	.....	.....	
Dinghy	Round	90-109	7-6	3-6	85	Cedar	Cedar	5	10	.....	.....	.....	
Dinghy	Round	102-112	9-0	3-10	115	Cedar	Cedar	5	10	.....	.....	.....	
Dinghy	Round	113-123	11-6	4-4	150	Cedar	Cedar	7	8	12	.....	.....	
Square End Canoe	Round	79-84	18-0	3-4	105	Cedar	Cedar	4	10	.....	.....	.....	
OWENS													
Annapolis, Md.													
18 Runabout	Vee	375	18-0	5-9	280	Oak	Mahogany	6	12	19	23	30	CEFHJLPWX
PENN YAN													
Penn Yan, N. Y.													
Motocub	Vee	150	9-0	4-2	135	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	2	.....	.....	.....	.....	
Motobear	Vee	170	11-0	4-2	150	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	3	.....	.....	.....	.....	
Playmate	Vee	190	15-0	4-2	185	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	4	.....	.....	.....	.....	
Super Buzz	Vee	225	16-0	4-6	245	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	5	.....	.....	.....	.....	
De Luxe Buzz	Vee	455	16-0	4-6	360	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	5	.....	.....	.....	.....	
Goliath	Vee	352	17-6	5-0	380	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	7	.....	.....	.....	.....	
Aristocrat	Vee	604	17-6	5-0	525	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	7	.....	.....	.....	.....	
Wasp	Step	204	12-0	4-4	180	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	1	.....	.....	.....	.....	
Cesstepper	Step	244	14-0	4-6	190	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	1	.....	.....	.....	.....	
Marathoner	Step	340	14-0	4-6	190	Pyroxylin Proc. Comp.	Pyroxylin Pro. Com.	2	.....	.....	.....	.....	
PIGEON HOLLOW SPAR													
East Boston, Mass.													
Three Star	Round	325	12-0	4-6	180	3/8 x 3/4 Mahogany	Mahogany	2	.....	.....	.....	.....	
Three Star	Round	350	14-0	4-0	190	3/8 x 3/4 Mahogany	Mahogany	4	.....	.....	.....	.....	
Three Star	Round	450	14-0	4-6	230	3/8 x 3/4 Mahogany	Mahogany	6	.....	.....	.....	.....	

Key to Equipment Symbols

A—Steering Wheel; B—Remote Control; C—Cushions; D—Windshield; E—Fire Extinguisher; F—Flag Staff; H—Boat Hook; J—Life Jackets; O—Oars; L—Running Lights; P—Pump; W—Whistle; X—Paddle

SPECIFICATIONS OF OUTBOARD BOATS

Name or Number of Model	Type of Bottom, Vee, Round or Step	Price	Length Feet	Beam Feet	Weight	Material and Size of Frames	Material Planking	Persons Carried	SPEED CLAIMED WITH MOTOR				*Equipment
									Class A	Class B	Class C	Class D	
PORTEUS													
Hartford, Conn.													
A	Oval Step	235	10-3	3-10	100	⅝ x 2¾ Spruce	Mahogany	1	26½	.....	.....	.....	
B and C	Oval Step	255	11-6	4-0	150	⅝ x 2¾ Spruce	Mahogany	1	.....	40	.....	.....	
RAMSET													
Miami, Florida													
Heeft	Step	200	8-0	3-4	100	Mahogany	Mahogany	1	.....	.....	.....	.....	
Heeft	Step	225	10-4	3-7½	150	Mahogany	Mahogany	1	.....	.....	.....	.....	
Heeft	Step	250	12-6	4-0½	190	Mahogany	Mahogany	2	.....	.....	.....	.....	
Ramseyboat		350	16-6	5-2	.....	Mahogany	Mahogany	8	.....	.....	30	.....	
Ramseyboat		450	16-6	5-2	.....	Mahogany	Mahogany	8	.....	.....	28	.....	CL
Fuberboat		65	12-6	4-0	200	Cypress	Cypress	4	.....	.....	.....	.....	
REABER BOAT CO.													
Seattle, Wash.													
Sportboat	Round	585	18-0	5-6	900	¾ x 1 Oak	Cedar	.....	.....	10	14	18	CL
SANDUSKY													
Sandusky, Ohio													
Midget 11	Round	175	11-0	4-6	167	⅞ x ⅞ Oak	Mahogany	4	15	25	.....	.....	O
Lucky 13	Round	200	13-0	4-6	195	⅞ x ⅞ Oak	Mahogany	6	.....	22	30	.....	O
Big 15	Round	225	15-0	4-8	215	⅞ x ⅞ Oak	Mahogany	8	.....	20	25	33	O
Big 15	Round	300	15-0	4-8	215	⅞ x ⅞ Oak	Mahogany	8	.....	20	25	33	CFLO
Big 15—Special	Round	450	15-0	5-3	300	⅞ x 1½ Oak	Mahogany	10	.....	20	25	33	CFLO
SCRUGGS													
Milton, Florida													
A Special	Round	87	12-0	3-8	170	⅝ x ⅞ Oak	Cedar	3	14	22	.....	.....	
14 Open	Round	125	14-0	4-0	185	⅝ x ⅞ Oak	Cedar	4	10	21	28	.....	
14 Runabout	Round	165	14-0	4-0	195	⅝ x ⅞ Oak	Cedar	4	10	21	28	.....	
15 Runabout	Vee	195	15-0	4-0	185	⅝ x 2½ Mahogany	Cedar	4	.....	22	29	32	
14 Runabout	Round	260	14-0	4-0	200	⅝ x ⅞ Oak	Mahogany	4	10	21	28	.....	CFLWX
16 Open	Round	142	16-0	4-6	200	⅝ x ⅞ Oak	Cedar	6	.....	19	26	30	
16 Runabout	Round	185	16-0	4-6	215	⅝ x ⅞ Oak	Cedar	6	.....	19	26	30	
16 Runabout	Round	285	16-0	4-6	225	⅝ x ⅞ Oak	Mahogany	6	.....	19	26	30	CFLWX
18 Open	Round	225	18-0	5-3	250	¾ x 1 Oak	Cedar	8	.....	12	21	24	
18 Runabout	Round	285	18-0	5-3	285	¾ x 1 Oak	Cedar	8	.....	12	21	24	
18 Runabout	Round	395	18-0	5-3	310	¾ x 1 Oak	Mahogany	8	.....	12	21	24	CFLWX
19 Cruiser	Round	345	18-6	5-8	365	¾ x 1 Oak	Cedar	8	.....	10	16	18	CFHX
22 Cruiser	Vee	1285	22-0	7-0	1100	¾ x 3½ Mahogany	Cedar	8	.....	.....	12	16	CEFHLPWX
SEA SLED													
West Mystic, Conn.													
13 Open	Inv. Vee	195	13-1½	4-2	245	Oak	Mahogany	4	.....	23	27	35	
14 Runabout	Inv. Vee	225	13-1½	4-2	275	Oak	Mahogany	4	.....	22	26	35	
16 Runabout	Inv. Vee	415	15-10½	4-5	340	Oak	Mahogany	4	.....	20	25	30	
18 Cruiser	Inv. Vee	815	19-9½	4-11	530	Oak	Mahogany	5	.....	.....	.....	25	
STEELCRAFT													
Boston, Mass.													
Baby Steelcraft	Double Concave	290	12-0	4-6	210	.....	18-ga. Armco Iron	4	.....	30	35	38	JX
Miss Steelcraft	Double Concave	425	15-0	4-6	325	.....	18-ga. Armco Iron	4	.....	25	33	35	ADJX
SUNFLOWER													
Lake Tomahawk, Wis.													
Steady Rider No. 20	Vee	185-225	16-0	4-0	225	Mahogany or Cedar	Mahogany or Cedar	6	.....	.....	30	.....	
Sunflower Special No. 15	Concave	125	13-6	4-0	125	Cedar	Cedar	3	.....	30	40	.....	
No. 30	Round	100	16-0	4-2	200	Oak	Cedar	7	.....	.....	25	.....	
THOMPSON													
Pulaski, Wis.													
16 Speed Fish Boat	Round	106	14-0	4-0	180	Oak	Cedar	7	.....	26	31	36	
16 Speed Fish Boat	Round	120	16-0	4-2	195	Oak	Cedar	9	.....	25	30	35	
Family Speedabout	Round	124	14-0	4-0	190	Oak	Cedar	6	.....	26	31	36	
Family Speedabout	Round	138	16-0	4-2	210	Oak	Cedar	9	.....	25	30	35	
Family Speedabout	Round	178	18-0	4-6	300	Oak	Cedar	11	.....	20	26	32	
Elite Speedster	Round	154	14-0	4-0	190	Oak	Cedar	6	.....	26	31	36	
Elite Speedster	Round	167	16-0	4-2	210	Oak	Cedar	9	.....	25	30	35	
Elite Speedster	Round	212	18-0	4-6	300	Oak	Cedar	11	.....	20	26	32	
De Luxe	Vee	250	16-0	4-2	275	Mahogany	Mahogany	6	.....	24	28	34	
Frantic 77	Step	130	12-0	3-10	110	Spruce	Cedar	2	.....	35	40	45	
Frantic 88	Step	150	14-0	4-6	130	Spruce	Cedar	2	.....	32	38	45	
TOPPAN													
Medford, Mass.													
Toppan 12	Dory	96	12-3	4-4	175	Oak	Pine	5	9	14	.....	.....	O
Toppan 15	Dory	115	15-3	4-6	250	Oak	Pine	7	7	13	17	.....	O
Toppan 16	Dory	140	16-3	4-9	325	Oak	Pine	8	.....	13	16	20	O
Toppan 18	Dory	180	18-3	5-0	400	Oak	Pine	10	.....	12	15	19	O
TREGONING													
Seattle, Wash.													
16 Steel	Round	225	16-0	4-4	450	Galv. Steel	Steel	6	.....	16	20	27	
16 Clinker	Round	195	16-0	4-4	300	Oak	Cedar	6	.....	16	20	27	
14 Clinker	Round	150	14-0	4-2	250	Oak	Cedar	4	10	18	22	.....	
WATERWITCH													
Benton Harbor, Mich.													
Runabout	Vee	.....	16-0	4-6	375	¾ Mahogany	Mahogany	6	.....	.....	.....	35	CFL
Step Runabout	Step	.....	15-0	4-5	255	¾ Mahogany	Mahogany	5	.....	.....	32	38	CFL
Stepabout	Step	.....	13-6	4-0	190	¾ Mahogany	Mahogany	4	.....	.....	36	40	C
A Racer	Step	.....	11-0	3-10	100	½ Mahogany	Mahogany	1	26	.....	.....	.....	
B-C Racer	Step	.....	13-0	4-2	150	⅝ Mahogany	Mahogany	1	.....	41	43	.....	
E Racer	Step	.....	15-0	4-5	190	⅝ Mahogany	Mahogany	1	.....	.....	.....	46	

*** Key to Equipment Symbols**

A—Steering Wheel; B—Remote Control; C—Cushions; D—Windshield; E—Fire Extinguisher; F—Flag Staff; H—Boat Hook; J—Life Jackets; O—Oars; L—Running Lights; P—Pump; W—Whistle; X—Paddle

SPECIFICATIONS OF AMERICAN OUTBOARD ENGINES

MODEL	Class A, B, C, D	Horse Power	Piston Displacement	Bore and Stroke	Number of Cylinders	R. P. M.	Weight	*Lubrication Method	*Make Ignition	*Make Spark Plugs	*Make Carburetor
CAILLE											
Detroit, Mich.											
Red Head 14	A	6	13.916	2¼ x 1¾	2	.....	40	Fu	Bo	.....	Til
Red Head 15	A	6	13.916	2¼ x 1¾	2	.....	43	Fu	Bo	.....	Til
Red Head 25	B	15	19.63	2½ x 2	2	.....	75	Fu	Bo	.....	Til
Red Head 45	C	21	29.6	2¾ x 2½	2	.....	105	Fu	Bo	.....	Til
Red Head (Racer) 35	A	10	13.916	2¼ x 1¾	2	.....	43	Fu	Bo	.....	Til
Red Head (Racer) 40	B	17	19.63	2½ x 2	2	.....	75	Fu	Bo	.....	Til
Red Head (Racer) 50	C	23	29.6	2¾ x 2½	2	.....	105	Fu	Bo	.....	Til
CROSS RADIAL											
Detroit, Mich.											
*563-S	G	50	74	2½ x 3	5	4000	155	Pr	Rob Bo	A C	Til
*563-R	G	50	74	2½ x 3	5	4500	.....	Pr	Rob Bo	A C & Bo	Winfield
*563-C	G	50	74	2½ x 3	5	4000	155	Pr	Rob Bo	A C	Til
ELTO											
Otuboard Motors Corp.											
Milwaukee, Wis.											
Fold Light	A	2¾	8.2	1¾ x 1⅝	2	3500	29	Fu	Fl	A C or Ch	Til
Lightweight	A	3½	10.2	2 x 1⅝	2	3500	38	Fu	AK	A C or Ch	Elto
Service Speedster	B	7	19.6	2½ x 2	2	3500	64	Fu	AK	A C or Ch	Elto
HiSpeed Speedster	B	12	19.6	2½ x 2	2	4500	62	Fu	AK	A C or Ch	Elto
Senior Speedster	C	14	24.5	2½ x 2½	2	4000	80	Fu	AK	A C or Ch	Elto
Senior Speedster (Starter)	C	14	24.5	2½ x 2½	2	4000	94	Fu	Storage Bat.	A C or Ch	Elto
Quad	E	35	49	2½ x 2½	4	4500	115	Fu	AK	A C or Ch	Elto
Quad (Starter)	E	35	49	2½ x 2½	4	4500	129	Fu	Storage Bat.	A C or Ch	Elto
EVINRUDE											
Milwaukee, Wis.											
Outborad Motors Corp.											
Fold-Light	A	2¾	8.2	1¾ x 1⅝	2	3500	29	Fu	Fl	A C	Til
Fleetwin	A	6	13.9	2⅛ x 2	2	4000	58	Fu	Fl	A C	Til
Fastwin	B	14	19.9	2⅝ x 2¼	2	4500	82	Fu	Fl	A C	Til
Speeditwin	C	20	29.9	2¾ x 2½	2	4500	97	Fu	Fl	A C	Til
Speeditwin 22	C	22	29.9	2¾ x 2½	2	4500	98	Fu	Storage Bat	A C	Til
Speeditwin 22 (Starter)	C	22	29.9	2¾ x 2½	2	4500	112	Fu	Storage Bat.	A C	Til
INDIAN											
Springfield, Mass.											
601	B	.....	19.63	2½ x 2	2	.....	67	Fu	Bo-Fl	Ch	Til
JOHNSON SEA HORSE											
Waukegan, Ill.											
Single	A	1½	4.71	2 x 1½	1	2800	27	Fu	Fl Mag	.....	Own
3	A	3	9.42	2 x 1½	2	3000	38	Fu	Fl Mag	.....	Own
4	A	4	8.28	1⅞ x 1½	2	4500	45	Fu	Fl Mag	.....	Own
10	B	10	19.9	2⅜ x 2¼	2	3800	63	Fu	Fl Mag	.....	Own
12	A	12	13.96	2⅛ x 1¾	2	4500	60	Fu	Fl Mag	.....	Own
16	B	16	19.9	2⅜ x 2¼	2	4500	89	Fu	Fl Mag	.....	Own
32	D	32	39.8	2⅜ x 2¼	4	4500	110	Fu	Fl Mag	.....	Own
LOCKWOOD											
Outdoor Motors Corp.											
Milwaukee, Wis.											
Fold-Light	A	2¾	8.2	1¾ x 1⅝	2	3500	29	Fu	Fl	A C	Til
Ace	A	7	13.9	2 1 x 2	2	4000	50	Fu	Fl	A C	Til
Chief	B	12	19.9	2⅝ x 2¼	2	4500	70	Fu	Fl	A C	Til
Chief (Starter)	B	12	19.9	2⅝ x 2¼	2	4500	84	Fu	Fl	A C	Til
MUNCIE TWIN											
Muncie, Ind.											
OB2	A	2½-3	9.42	2 x 1½	2	3250	42	Fu	Bo	A C	Til

***KEY TO SYMBOLS**

*—4 Cycle
Bo—Bosch
Ch—Champion
Ei—Eiseman
Fl—Flywheel
Pr—Pressure
Fu—In Fuel
Sc—Scintilla
Til—Tillotson
Zen—Zenith
AK—Atwater Kent

All of the larger sizes of engines will be supplied with electric starters in 1930

CHICAGO SHOW SPACE SELLING FAST

Forty-four boat, engine or accessory manufacturing firms are already occupying space in Chicago's permanent Motor Boat Mart on Navy Pier and several others have contracted for space in this permanent exhibit. All of these form a most comfortable nucleus for the Chicago National Boat Show to be held on the Pier from April 25 to May 3 inclusive. The space occupied by this permanent show is 600 feet long with a net width of 66 feet and a balcony 20 feet in width. This long show room is already handsomely decorated, comfortably heated and the exhibits now in place form a most unusual boat show in themselves. The Motor Boat Mart was originally started on Diversey Parkway on the North Side. The initial headquarters were outgrown in a single year and much larger quarters on the same thoroughfare were secured and occupied. A constant growth forced the management to seek even larger quarters. Manager Hubbard H. Erickson was fortunate enough to secure a long lease from the City of Chicago of the entire upper floor of the north wing of Navy Pier. Planned as a recreational as well as a commercial enterprise, Navy Pier stands today as the largest pier on the Great Lakes if not in the United States. The portion now occupied by the permanent Motor Boat Mart is less than one-third of the space covered by the Erickson lease, all of which is to be used for the National Boat Show.

Gangs of workmen are now engaged in converting the additional 1600 feet of length of this space from a commercial st room into the most unusual exposition hall in the country. T sides are all being enclosed with ornamental woodwork; the lo glass and steel arch which forms the ceiling is being artistic painted and decorated. At intervals of every 500 feet attracti banks of offices are being installed along the outer wall. Th are planned as private offices for exhibiting firms. They fro on one of the two main aisles which will extend from one e of the vast room to the other. Each of these aisles will be mo than one-third of a mile in length, forming what might be likene to a double business street, all enclosed, decorated, heated a lighted. When completed, ready for the installation of the fi exhibits at the beginning of the fourth week of April, this exp sition hall will present a most unusual picture.

That exhibits which will remain through this National Bo Show are already arriving may be known from the fact that thirty-foot A. C. F. cruiser went on display last week and that thirty-eight foot cruiser was shipped by the same company fro its Wilmington, Del., plant on Feb. 8 to be on display with t week beginning Feb. 17. Ward Robinson of Chicago is in charg of this particular display.

As an indication of how the space will be occupied it may said that seven different companies engaged in manufacturi runabouts have secured space for the permanent show and fi six others are negotiating for space for the National show a combination of the permanent and the national shows.

The Sea Steps up Socially!

OH, the stormy winds may blow and the raging seas may do just that but as long as the larder's well provisioned and the pantry well provided with Ovington china and crystal, everything's swell on the old Atlantic!

Ovington's has done a lot for the poor sailor man who prefers terrapin to salt beef, who can take his plum duff or leave it alone. We've provided the proper settings: china and crystal that is born to the sea and the wave but perfectly at home with caviar or canvas-back, truffles or broccoli.

Seven hundred of the smartest yachts that sail the seven seas have recruited Ovington's services—and hundreds of smaller craft that make Newport and Palm Beach their ports of call. And yet these services of ours are not expensive. A seagoing china service for six, every piece from sauce bowl to soup tureen tattooed with your club and your craft's insignia, sells for as little as $63. And matching crystal costs much less.

"Gifts from all over the World"

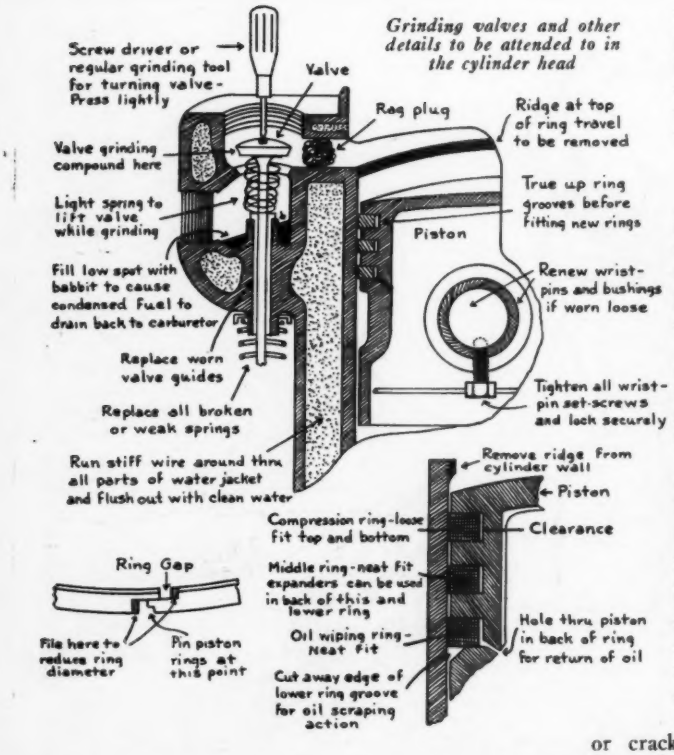
OVINGTON'S

437 Fifth Avenue
New York

Telephone: Caledonia 8700

GIVE THE ENGINE ITS DUE

(*Continued from page 45*)


Grinding valves and other details to be attended to in the cylinder head
Screw driver or regular grinding tool for turning valve - Press lightly
Valve
Rag plug
Ridge at top of ring travel to be removed
Valve grinding compound here
Light spring to lift valve while grinding
True up ring grooves before fitting new rings
Piston
Fill low spot with babbit to cause condensed fuel to drain back to carburetor
Renew wrist-pins and bushings if worn loose
Replace worn valve guides
Tighten all wrist-pin set-screws and lock securely
Replace all broken or weak springs
Run stiff wire around thru all parts of water jacket and flush out with clean water
Remove ridge from cylinder wall
Piston
Clearance
Compression ring - loose fit top and bottom
Middle ring - neat fit expanders can be used in back of this and lower ring
Oil wiping ring - Neat fit
Hole thru piston in back of ring for return of oil
Cut away edge of lower ring groove for oil scraping action
Ring Gap
File here to reduce ring diameter
Pin piston rings at this point

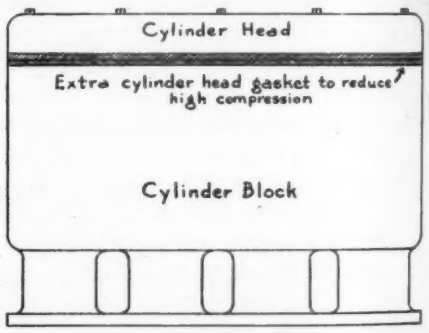
see that the job is shipshape, then make temporary carbureter and ignition adjustment. When the boat is launched in the spring, it will only be necessary to give the motor a gradual running in, at which time the permanent carbureter and ignition adjustments are made, and the engine will be found to be as good as new.

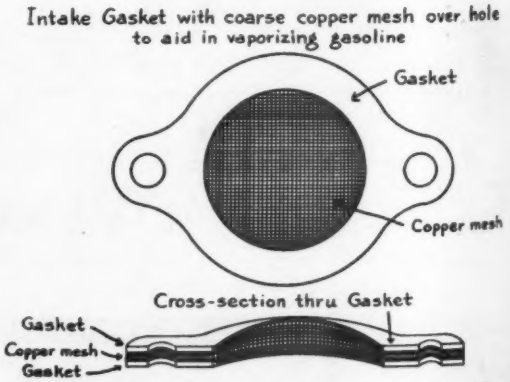
Don't be impatient, however, and start the motor. Leave that until the boat is overboard, as running while the hull is only supported by blocks and shoring is liable to loosen things up and strain the boat. After the boat has been placed in the water, check up on the alignment of the engine with the reverse gear and the reverse gear with the propeller shaft. Any misalignment should be corrected at once, after which the motor is started and idled slowly, meanwhile listening for signs of laboring, knocking or overheating. If, after an hour or so of idling, everything seems to be satisfactory, leave the boat tied to buoy or wharf, throw in the clutch and make both the low and high speed adjustments while under load; then, leave the motor under load for two or three hours with the throttle half-way open and the spark fully advanced. On the first few runs, which should not be long ones, do not crowd the engine, rather work it in gradually; and, by doing this, you will find your performance along toward the last of the season to be much better than if you had punished the motor by overloading and overheating before it had loosened up properly at the start of the summer. The fellow who goes to this trouble, rarely comes in on the wrong end of a tow-line, and here's hoping you never will.

As these preceding paragraphs have only touched the various matters pertaining to this job in a general way, let's get down to our little undertaking and go to it in a systematic way, presuming that you have decided what the engine needs and that the necessary tearing down has been accomplished. To do this, we will start in at the bottom, which is the

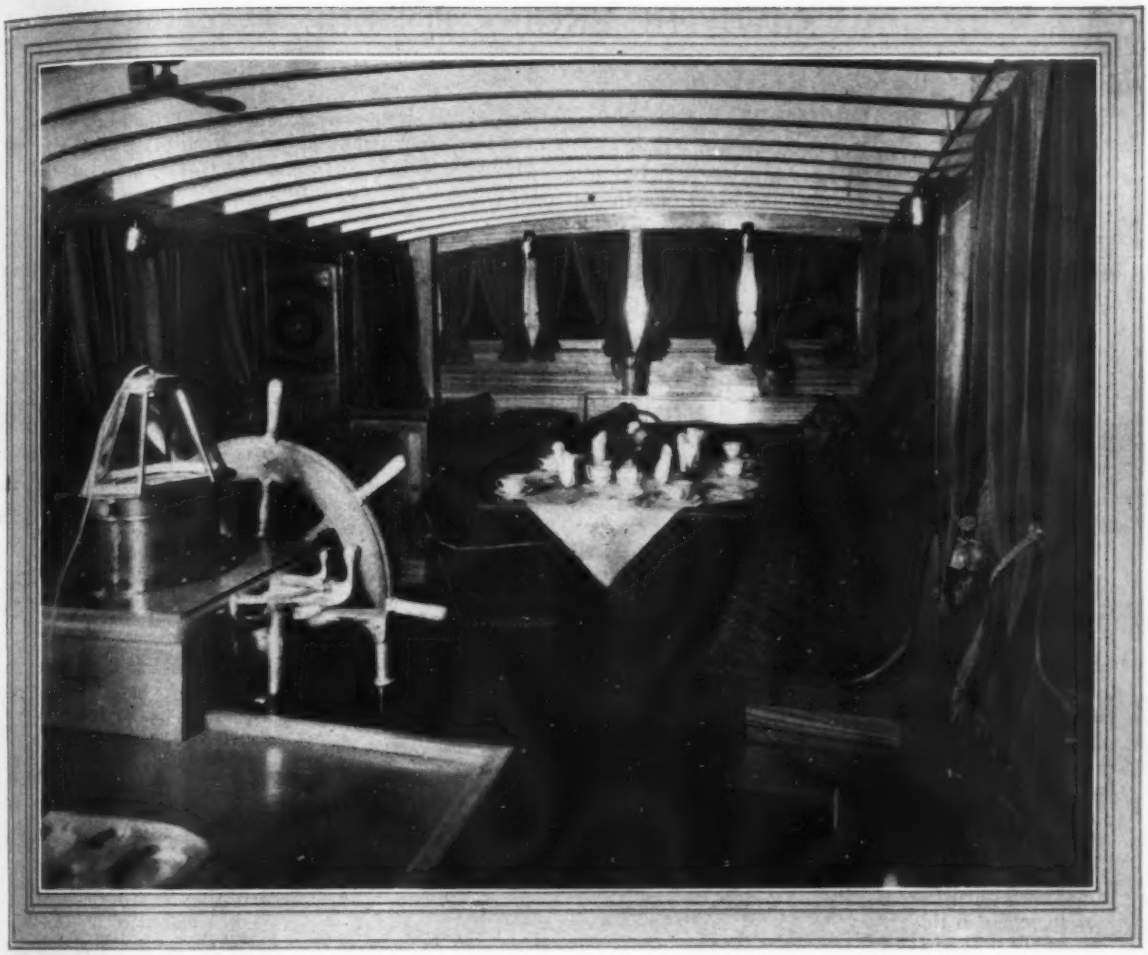
CRANKCASE

Drain out all the old lubricant; clean thoroughly, inside and out; clear all oil pipes or leads by running a wire and a piece of rag through, or flush out with gasoline under pressure; renew all packing and gaskets; clean and adjust oil pump, or if it shows signs of wear, renew the worn parts, as this is a vital part of the engine's life and operation, and repack any stuffing boxes; examine for any signs of cracks or leaks, and if any are found, repair by bolting on patch, welding or brazing (if you have a blow-torch, some soft brass wire of small diameter, and some powdered borax, clean out the crack, heat it well and melt the brass wire into the surrounding metal, using the borax as a flux, which is brazing); two-cycle crankcases must be absolutely air-tight, on account of base compression, consequently all bearings on the crankshaft must be set up tight and new gaskets of the proper thickness put in place with shellac; check the support flanges (by which the motor is supported on its bed) for signs of sagging or cracking, any faults found must be corrected. Don't forget to clean oil screen. (*Continued on page 96*)





An extra gasket helps to reduce high compression while a screened intake breaks up the fuel mixture



Lounge and Dining Room of a 55 Foot Yacht

by VINYARD

All that one could ask in beauty and strength ✦✦✦ A pride of ownership you will never forget ✦✦✦ A guest's room to suit the most exacting ✦✦✦ A spacious and well appointed galley with frigidaire, located well away from living quarters ✦✦✦ An extra large bath room with tub and shower ✦✦✦ Draperies and carpets harmonizing with polished mahogany ✦✦✦ A dining room measuring sixteen feet fore and aft ✦✦✦ An extra size cockpit with rest couch where you can watch the miles as they slip away ✦✦✦ All blending into a luxurious craft ✦✦✦ A yacht able to go where you will, in safety and comfort with little expense ✦✦✦ Because a minimum overhead is passed to Vinyard owners ✦✦✦ Vinyard's superior value is exemplified not only in first cost but in performance for years to come ✦✦✦ Will you be our guest on a trial trip you will remember? ✦✦✦ There will be no obligation, of course ✦✦✦ May we hear from you?

VINYARD SHIP BUILDING CO.

Designers and Builders of Yachts and Cruisers of the Highest Class

MILFORD, DELAWARE

GIVE THE ENGINE ITS DUE

(*Continued from page 94*)

CRANKSHAFT

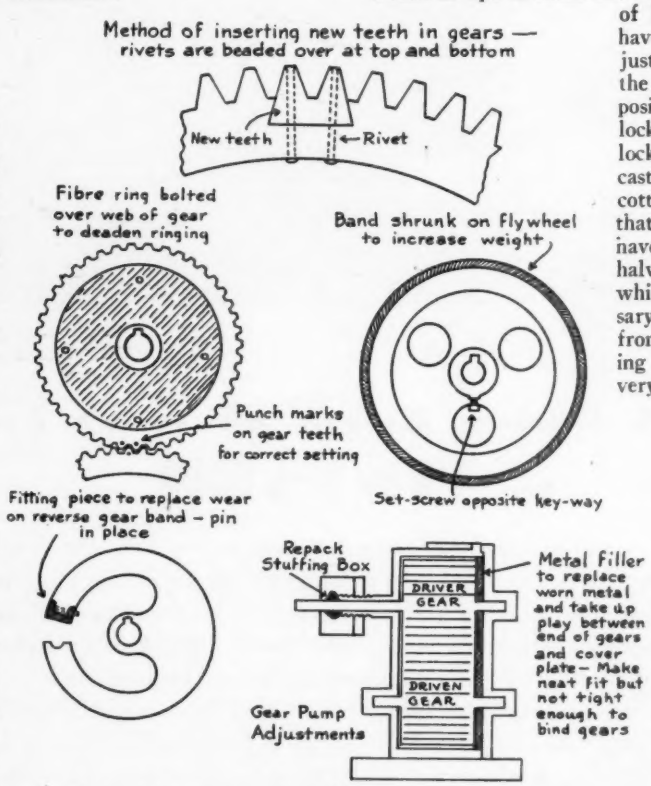
If the motor has not had an overhauling for two or three seasons, it is best to remove flywheel and crankshaft for inspection; caliper or test with micrometer all bearing surfaces, and wherever found out of round or with flat spots, correct by careful handfiling and lapping with a tool as illustrated, using a medium or course emery paste in the tool and finishing with fine emery cloth wrapped around shaft and rotated by a piece of cord with two or three turns around the emery cloth; the best method, particularly with high speed motors, is to take the crankshaft to a shop and have it turned down and polished in a lathe, after which underside bearings are poured or fitted for the newly machined surfaces; in case the shaft is sprung or shows signs of weakness, it is best to purchase a new one, as it is the backbone of the motor and its failure puts the power plant completely out of business until a new one is secured and fitted. Clean out all oil leads in hollow crankshafts.

CAMSHAFT AND ASSEMBLY

Remove camshaft and test for straightness as well as for evidence of wear on bearing surfaces, cams, or tappets; any parts found defective or worn should be replaced with new, as looseness in this assembly will seriously effect the efficiency of the motor and make it noisy.

GEARS

Test all gears for worn, chattered or broken teeth, etc., replacing or repairing (method of repairing shown in illustration). Where one gear needs replacing, it is best to renew the entire assembly to avoid future trouble, as one worn gear in an assembly will soon damage the new one; if your gears have given trouble with a ringing growl, bolt a circle of fibre to the gear webs, as shown in sketch, and this will deaden it, however, the best method of eliminating ringing or growling, is to replace with new helical cut gears, installing them properly in line and with about .002 inch clearance between the teeth; this method applies to all gears, as they must bear just a little perceptible motion between the teeth in order to prevent them from growling or running hot; inspect the keyways and keys to see that they are not chipped or worn out of square, and if any of these defects are found, repair by enlarging the keyway and carefully fitting a new key, as gears which are loose on shafts will create much noise and clatter; also do not forget to replace gears according to the punch-marks on the teeth, as shown in illustration.


Method of inserting new teeth in gears — rivets are beaded over at top and bottom
New teeth
Rivet
Fibre ring bolted over web of gear to deaden ringing
Band shrunk on flywheel to increase weight
Punch marks on gear teeth for correct setting
Set-screw opposite key-way
Fitting piece to replace wear on reverse gear band – pin in place
Repack Stuffing Box
DRIVER GEAR
DRIVEN GEAR
Metal Filler to replace worn metal and take up play between end of gears and cover plate – Make neat fit but not tight enough to bind gears
Gear Pump Adjustments

Useful points to remember while working on an engine in need of repairs

BEARINGS

Main crankshaft bearings should be tested for looseness and adjusted by removing shims from between upper and lower halves until a slight drag is felt when turning the crankshaft, setting up tight will cause them to run hot and burn out; loosen all of these bearings first, adjust the front or flywheel bearing first, loosen it, adjust the rear bearing, loosen it, adjust the center bearing, loosen it and then advance to the others, if any; this method is to line the crankshaft up as the bearings are being adjusted, as starting in at one end of the shaft and advancing on to each bearing in turn would be apt to cause one or more bearings to be out of line and bind; after all have been satisfactorily adjusted to a correct fit, give the final tightening and make positive that each bolt is locked in place by means of lock-washers, lock-nuts, or castellated nuts locked with cotter pins; you may find that your bearings do not have shims in between the halves for adjusting, in which case it will be necessary to file off a little metal from the flanges of the bearing cap; this should be done very carefully so as not to file off too much and cause the bearing to bind; if any of the bearings are out of line with the others, the high ones will have to be carefully scraped until they all line up properly; by smearing a little Prussian Blue on the shaft and tightening up on the bearing bolts until the end bearings are in place, then rotating the shaft, those bearings which are high will show the blue smeared well over face of the bearings, while the low ones will show only a trace or none at all of the blue; a job of this nature should receive careful and painstaking work to get it into shape, and unless you have had experience in scraping and lining bearings, do not try it, rather have a mechanic in to take care of this work; the same advice applies to cases where the bearings are burned, cracked or badly worn, as new bearings must be poured or installed, scraped to a fit (*Continued on page 158*)

----and furthermore the most compact ever built!

Sold by
EVINRUDE
Elto
LOCKWOOD
Dealers throughout the world

INTO a carrying case less than 18 inches long you easily slip the folded Fold-Light. That's real *compactness.* Compactness never known before in an outboard motor.

The Fold-Light weighs exactly 29 pounds. That's *lightness.* No other twin cylinder outboard even approaches it.

But overshadowing even these extraordinary values is *performance.* Here Fold-Light is equally outstanding. Its 2¾ horsepower offers greatest power-per-pound of any light outboard. With specially designed magneto and carburetor it starts easily, almost effortlessly. Such features as cushioned-in-rubber power head and automatic lubrication system to the main bearings are evidence of the exceptionally fine construction throughout.

Any small-boat user will be interested in the complete story of the Fold-Light. We will mail it on request.

OUTBOARD MOTORS CORPORATION
Milwaukee, Wisconsin

FOLD LIGHT

OUTBOARD MOTORS CORPORATION
2121-27th Street, Milwaukee, Wis.
Gentlemen: Send me catalog describing the FOLD-LIGHT.
Name.....
Address.....
City..... State.....

Good News

This New Gray 6-50 Becomes Famous Overnight!

Here's Why

Weight, 540 lbs.
$3\frac{5}{16}$" Bore.
$3\frac{7}{8}$" Stroke.
$1\frac{1}{4}$" Carburetor.
$2\frac{1}{16}$" Crankshaft.
3 Bearing Crankshaft.
200 Cubic Inches Displacement.
50 Inches Length Overall.
Aluminum base.
Price $555.00.

Now showing over 30 M.P.H. in 1930 Hulls. Silicon Chrome Exhaust Valves. Chadwick Interchangeable Bearings. Large Water Pump. High Compression. New large intake manifolds. New Carburetion. A six recently developed for strictly high-speed runabout work, using small propellers in the lighter hulls. Gray "Six-40," 200 cu. in., in Gray Line since 1925, is still leading Gray sales in cruisers, runabouts and workboats where speeds up to 2000 r.p.m. can be efficiently used.

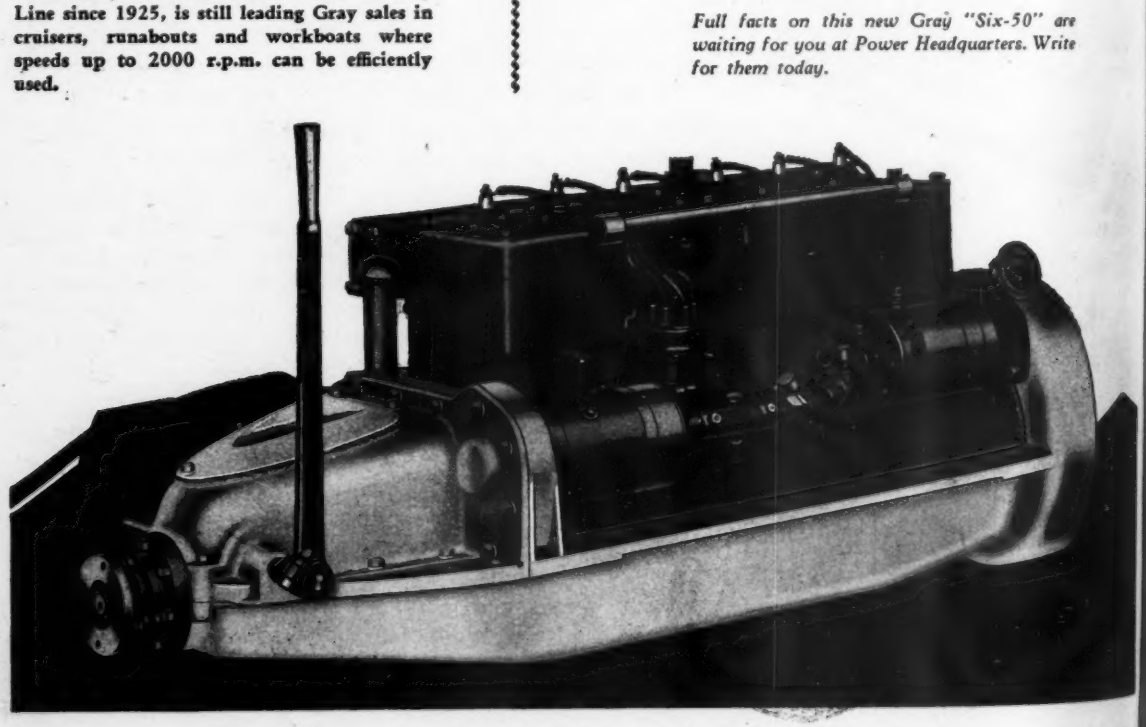
There's many a runabout that will run circles around its last year's record, because its owner decided upon this new Gray "Six-50" for 1930 power.

That's just the type of motor Gray "Six-50" was designed to be—a power plant to make owner and boat fast friends.

This unit—that has set the marine world talking and buying in record time—responds with a burst of speed at the throttle's touch. It is a powerful unit, with all the stamina and ruggedness and backbone for which Gray is famous.

But it is speed and power and stamina without weight. Better than one-fifth of its poundage is left on shore, thanks to Gray engineers. A full-fledged Gray Six weighing only 540 lbs., developing 55 H.P. at 2800 r.p.m.

Full facts on this new Gray "Six-50" are waiting for you at Power Headquarters. Write for them today.



Advertising index will be found on 3rd last page

travels fast

The great, growing volume of business coming to Gray each day is undisputable proof that the news of the Great 1930 Gray Line has traveled fast and far—that it has hit home with the boat buyer everywhere.

Boat Builders are coming to Gray. More Gray engines displayed at the New York Show than any other make of motor.

Motor Buyers are flocking to Gray because Gray value today, as in the past, cannot be equaled.

Motor Buyers are coming to Gray as never before, because Gray leads in improvements—in new motors—yet motors that are ready to demonstrate under punishment and hard service their fitness to bear the Gray name.

Motor Buyers are flocking to Gray because Gray has a motor to meet the specific power requirements of every boat, no matter what the size or type:

THREE RENOWNED EIGHTS
EIGHT SUPREME SIXES
NINE DEPENDABLE FOURS

To the man in the market for a motor, Gray offers a combination of price, size and power that matches his needs and purse.

See the announcement of the Gray Vee Drive in this issue.

Gray Marine Motor Co.
680 Canton Avenue • Detroit, Mich.

GRAY MOTORS

Built by Pioneers—Engineers—Leaders

CALENDAR OF COMING EVENTS

April 10-13, Charleston, S. C. 250th Anniversary Celebration, Outboard regatta.

April 26—Albany-New York Race, Outboard Classes B, C and D E. Div. 1, 2 and 3 in each class.—Haynes Griffin Co., 41 W. 43rd St., New York City.

April 26—Richmond, Va., C. S. King Fulton, Planters Bank Bldg., Richmond, Va.

April 24-25-26-27—Long Beach, Calif., to San Francisco—D. M. Callis, 106 East C Street, Wilmington, Calif.

May 16-17—Intercollegiate Outboard Races—Colgate Outing Club, Hamilton, N. Y.

May 29-30—Outboard Regatta, Lake Quinsigamund, Mass.—All classes and time trials. F. Wigglesworth, 20 Brookline Ave., Boston, Mass.

May 30—Westerly Boat Club, Westerly, R. I.—E. V. Howe, 663 Thames St., Newport, R. I.

May 30—Terre Haute, Indiana, Wabash Valley Boat Club, Outboard Marathon and class races.

June 10—Ocean Sailing Race, San Francisco to Tahiti. H. B. Warren, 610 American Bank Building, Los Angeles, Cal.

June 15—Camp Slocum, Kickamuit River, R. I.—E. V. Howe, 663 Thames St., Newport, R. I.

une 22—Fall River Yacht Club, Tiverton, R. I.—E. V. Howe, 663 Thames St., Newport, R. I.

July 2-3-4—21st Annual Ocean Race Under the Auspices of Yachtsmen's Club—Dr. Eugene Swayne, 5617 Girard Ave., Philadelphia, Pa.

July 4—Ocean Sailing Race Los Angeles to Honolulu, H. B. Warren, 610 American Bank Building, Los Angeles, Cal.

July 4—Westerly Boat Club, Westerly, R. I.—E. V. Howe, 663 Thames St., Newport, R. I.

July 7-19—Observation Races for the several contenders for the defense of the America's Cup.

July 12—Block Island Race for Cruisers, 100 N. Miles. New York Athletic Club—F. W. Horenburger, 959

July 12—Canajahorie, N. Y.—Mohawk Valley Towns Association Regatta—Harold W. Cole, c/o The Journal, Scotia, N. Y.

July 13—Lake Winneconnet, Taunton, Mass.—E. V. Howe, 663 Thames St., Newport, R. I.

July 13—Interlake Yachting Association Regatta at Put-in-Bay, Ohio.

July 18-19—Portland, Me., Regatta—A. L. Anderson, Camden Yacht Club, Camden, Me.

July 22—Augusta, Me., Regatta—A. L. Anderson, Camden Yacht Club, Camden, Me.

July 25-26—Camden, Me., Regatta—A. L. Anderson, Camden Yacht Club, Camden, Me.

July 25-26—Newport, R. I.—Dr. H. P. Beck, Newport, R. I.

July 31-Aug. 2—Bay City, Mich. Eastern Michigan Water Carnival, Outboard regatta

Aug. 1—Tenth Annual Bayside-Block Island Auxiliary Handicap—Harry V. Spurr, 45 East 17th Street, N. Y. City.

August 1-3—Buffalo, N. Y. Regatta. A. C. Glasser, Sec'y, 122 Pearl St., Buffalo, N. Y.

August 2-3—Stone Harbor, N. J.—Dr. Wm. Haines, Medical Arts Buildings, 16th & Walnut Sts., Philadephia, Pa.

August 8-10—Miles River Yacht Club, Miles River, Md.

August 10—Camp Slocum, Kickamuit River, R. I.—E. V. Howe, 663 Thames St., Newport, R. I.

August 16-17—Gold Cup Regatta, Red Bank, N. J.—Comm. Gerald Holbrook, Red Bank, N. J.

RACING IN EUROPE

Union Internationale de Yachting Automobile

May 18—Holland, Outboards circuit of the Grand River.

May 27-June 2—Germany, at Berlin, Potsdam. All classes.

June 15—Belgium, Brussels. All classes.

June 26-27-28—England, Thames. Duke of York trophy and outboards.

July 7 and 15—France, Herblay. All classes and outboards.

August 3—Sweden, Stockholm. All classes.

September 18-22—Italy, Venice. All classes.

MOTOR BOAT SHOWS

March 29-April 5—Los Angeles Boat Show, Ambassador Auditorium, Los Angeles, Calif.—Waldo T. Tupper, Manager, Ambassador Auditorium, Los Angeles, Calif.

March 29-April 5—Detroit Motor Boat & Sportsman Show, Detroit, Michigan—H. H. Shuart, 5-219 General Motors Bldg., Detroit, Mich.

April 7-12—South Atlantic Exposition, Washington Auditorium. W. A. Rogers, Woodward Bldg., Washington, D. C.

April 15-20—Northwest Motor Boat Show, Seattle, Wash.—S. O. B. Miller, 63 Columbia St., Seattle, Wash.

April 23-30—Pacific Coast Boat Show, San Francisco, Calif., 417 Market St.

April 25-May 3—Spring Motor Boat Show sanctioned by National Association of Engine and Boat Manufacturers, Navy Pier, Chicago, Ill.

EVENTS IN FLORIDA

Florida Outboard Motor Association

April 3—St. Augustine, Fla.

April 4—Jacksonville, Fla.

DELAWARE RIVER EVENTS

Delaware River Yachtsmen's League

June 21—Dual Class Regatta, Forest Hills Y. C. and Farragut Sportsmen's Assn., Camden, N. J.

June 28—Dual Class Regatta, Riverside Y. C. and Westville P. B. A. at Riverside, Essington, Pa.

July 4-5—Municipal Regatta, auspices Trenton Yacht Club, trophies by City of Trenton—Outboards, speedboats and cruisers.

July 12—Speedboat Regatta, Delaware River Y. C., Torresdale—John Wanamaker, Jr., trophy races.

July 13—Cruiser and Cabin Boat Championships of Delaware River, Wissinoming Y. C.

July 19—Annual Outboard and Speedboat Regatta of West End B. C., Chester, Pa.

July 26—Outboard and Speedboat Regatta of Keystone Y. C. and Delaware River Outboard Motorboat Assn., at Tacony.

July 27—Special Keystone Y. C. Cruiser and Cabin Boat Regatta, Tacony.

August 2-10—Annual Chesapeake Bay Cruise of Riverside Yacht Club.

August 8-9—Third Annual Philadelphia Outboard Regatta on Schuylkill River for $6000 Sir Thomas Lipton trophy.

August 16-17—Canoe championships of Eastern Canoe Association, and Outboard and Speedboat Regatta, of Anchor Yacht Club, Bristol, Pa.

SOUTH JERSEY EVENTS

Martin N. Fritsch, Box 325, Mays Landing, N. J.

June 7—Reeds Beach, Delaware Bay.

May 30—Mays Landing, N. J.

June 15—Laurel Lake, Millville, N. J.

June 21—Atlantic City, N. J.

June 22—Somers Point, N. J.

July 4—Chestnut Neck, N. J.

July 5—Lu Lu Yacht Club, Atlantic City, N. J.

July 12—Wildwood, N. J.

July 19—Cape May, N. J.

August 2—Port Norris, N. J.

August 3—Avalon, N. J.

August 9-10—Stone Harbor, N. J.

August 16—Brigantine, N. J.

August 23—Ocean City, N. J.

August 30—Margate Longport, N. J.

September 1—Lower Bank, N. J.

September 6—Mays Landing, N. J.

CALIFORNIA REGATTAS

A. L. Bobrick
111 Garey St., Los Angeles, Calif.

May 3—Alamitos Bay, Long Beach, Calif.

July 4—Alamitos Bay, Long Beach, Calif.

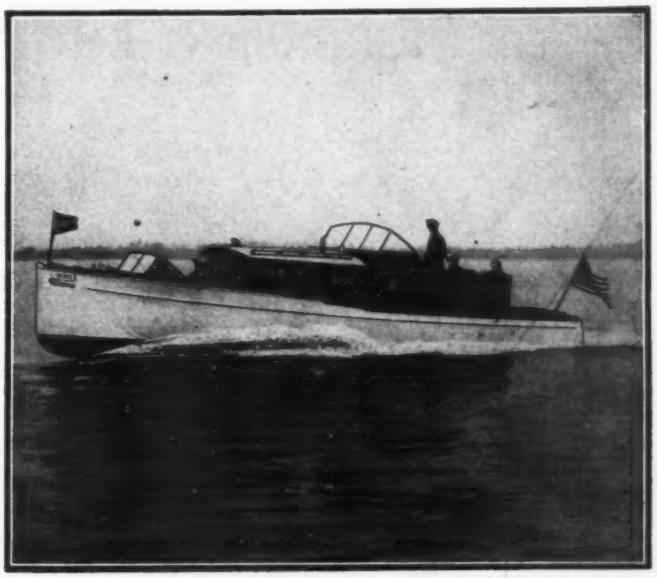
August 10—Balboa, Calif.

September 9—Admission Day—Lake Merritt, Oakland, Calif.

November 29—Salton Sea, Calif.

December 6-7—Lake Elsinore, Calif.

Little details guard big reputations



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When the first A. C. F. Cruisers were launched five years ago, they were instantly acclaimed as boats which gave the purchasers full value for their money. Since that start, A. C. F. Cruisers have proved to be typical examples of craft produced by a company with tremendous resources, a company that recognized the value of working out every detail with the aid of master craftsmen . . . specialists in all departments of boat construction.

It's no wonder, then, that so many Wilcox-Crittenden Fittings have been specified for the 1930 Fleet. A. C. F. engineers have realized the importance of W-C dependability . . . the seaworthiness and quality which led old time mariners to trust the safety of their ships to W-C soundness and worth. A. C. F. designers have appreciated the modern grace of line in W-C Fittings which harmonizes with the craft of today, the new improvements and features which Wilcox-Crittenden has developed.

It's easy to find out about the W-C improvements for 1930. Just use the coupon below and send for the 1930 Boating Manual and Catalog. It not only describes all the new W-C items . . . fittings that add speed and comfort to your craft, extra gadgets that give your boat a modern touch, dependable items that increase your margin of safety . . . but also contains a wealth of information helpful to every boatman. Proper weights of anchors, hints on mooring, instructions on the care of boats, how to box the compass, rules of the road at sea and many other articles make this new book a reference guide you'll use all season. Wilcox, Crittenden & Co., Inc., 4 South Main Street, Middletown, Conn.

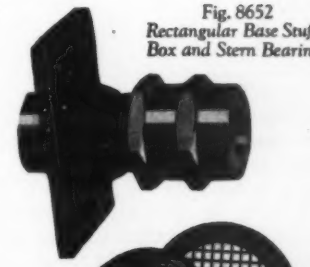

Fig. 8652
Rectangular Base Stuffing Box and Stern Bearing

Fig. 5312
Superior Yacht Manhole Plate

Fig. 5740
Galvanized Navy Windlasses

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INCREASING ENGINE POWER

An Explanation of the Root Blower or Supercharger As Used on Niagara Engines—What It Is and How It Functions

THE introduction by the Niagara Motors Corporation of a supercharger on their marine engines, the first of which were exhibited at the New York Motor Boat Show, has aroused considerable interest in the reason for the construction of, and operation of such units and has called for a clearer understanding of this well-known old type blower.

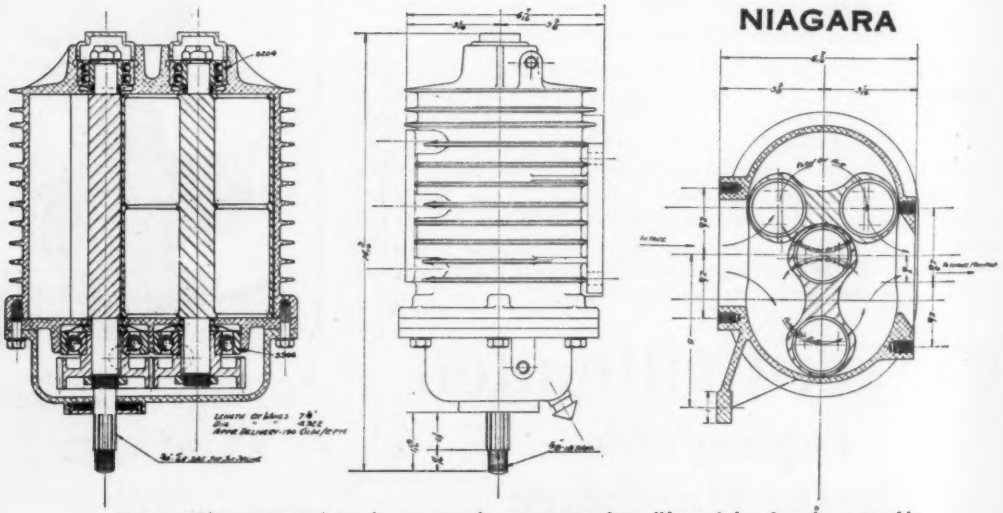
In the first place the word supercharger as applied to motor cars and marine engines is more or less confusing; actually that name is a misnomer and should be full-charger. With the usual type of carbureter as found on the average marine engine today, gasoline vapor is drawn through the intake manifold from the carbureter by the suction caused by the down-stroke of the pistons. Obviously with this system it is virtually impossible to get a full charge of gas into the cylinders, that is, to completely fill each cylinder with a maximum volume of the explosive mixture, ready to be fired at compression on the top of the piston stroke. Consequently when at high speeds the average cylinder would not be filled, the use of a blower or so-called supercharger, is introduced to charge this cylinder up to its 100 per cent capacity. Its sole purpose is to give increased power all along the speed range and this is accomplished merely by increasing up to as nearly 100 per cent capacity as possible, the amount of usable mixture delivered to the cylinders.

The simplest form of blower is that which was originally invented at Connersville, Indiana, nearly half a century ago. It is known as the Root blower and is built for the purpose of positively displacing or blowing air through conduits. Blowers of this type have been manufactured for nearly fifty years and are in every-day service in thousands of factories throughout the country.

A glance at the illustration reveals that the new blower as used on gas engines is exactly the same as the old type blower except that it is mounted on ball bearings and is made with a great deal more precision. The wings or rotors run at speeds ranging from 2,000 to 4,000 r.p.m. and accordingly parts must be made of the highest grade materials and accurately machined and balanced to prevent undue vibration and wear. The wings rotate in opposite directions and do not touch each other, having at all times a clearance of approximately .003 inch. With more clearance than this there is a loss of efficiency due to the slippage of air between the wings. Construction, as a glance at the cut discloses, is relatively simple and there is nothing to get out of order so that there is little chance of its being unable to function properly long after the engine itself is worn out.

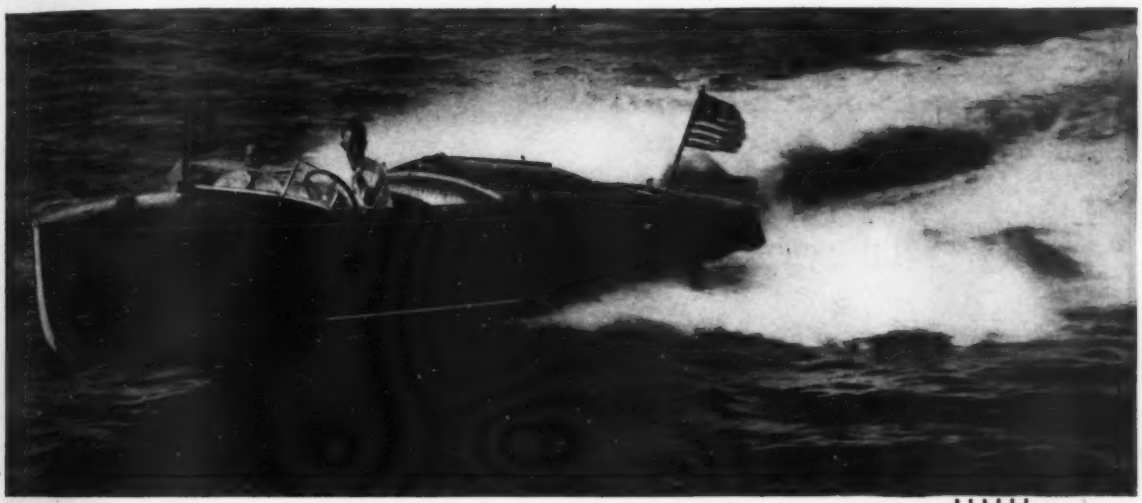
Fundamentally the idea of the blower is to increase the maximum horsepower of the engine without a corresponding increase in bore and stroke, which naturally would mean a proportionate increase in the size and weight of the engine. For example, the eight cylinder Niagara engine with 4-inch bore and 4½-inch stroke normally develops 152 h.p. with the usual type of carbureter and weighs 882 pounds. The addition of the supercharger necessitates the addition of only 60 pounds but results in raising the power output to 201 h.p. at the same speed. If the engine were to be designed and built to develop 201 h.p., with proportionately rugged construction, and without the use of a blower, the diameter of the piston would have to be increased to 4½ inches or 4⅝ inches and the stroke to 5. This of course would correspondingly increase the length and height of the engine as well as the

(*Continued on page* 190)



Few working parts and precise construction guarantee long life and freedom from trouble in the Root Blower

VICTORIOUS *at* PALM BEACH----*a Kermath powered Hackercraft*



Kermath powered boats—cruisers, commuters, runabouts—consistently prove their mettle in the heat of racing competition. Most recent of these competitive events—the Palm Beach Regatta—saw a 26 foot Hackercraft, the "Adriatic," owned by Mr. J. D. Wooster Lambert of St. Louis and Palm Beach, powered with a stock Kermath 678 cubic inch engine, flash across the finish line a winner. Significantly this same boat, powered with the same Kermath engine, won last year's classic—a most conclusive and consistent proof of performance and superior speeds. The racing average for the event was 42.959 m.p.h! Improved and perfected, the new Kermath "six" now offers even greater speeds—translates its 225 horsepower into swift, silent dependability and enthralling driving action. A dual valve-in-head engine with downdraft carburetion for runabouts, cruisers and commuters!

KERMATH MANUFACTURING COMPANY
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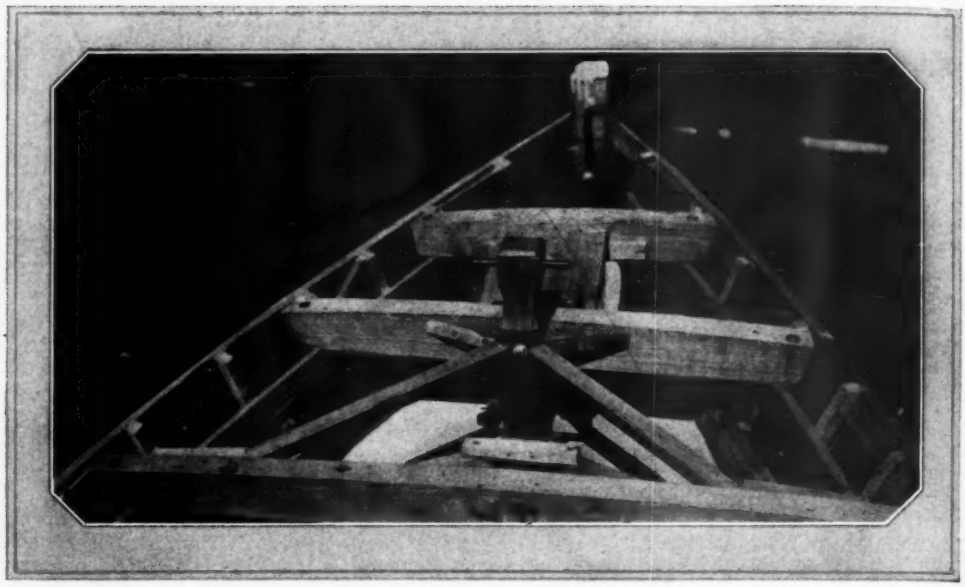
KERMATH

A KERMATH ALWAYS RUNS



The mooring bitt installation. Note thorough bracing

IT TOOK PATIENCE TO BUILD TYEE

(*Continued from page* 42)

rested on and was fastened to the yellow-pine shelf.

The various lengths of these covering board and coaming supports I found from the contour of the old coaming taken from the boat. At their outboard end they were, of course, flush with the top of the top plank. To give them their proper slant upward toward the center of the boat so the covering board would slant the same as the decks fore and aft I used a straight edge across the boat wherever one of these supports was located. A line drawn from the center of this straight edge, one inch up from its lower edge out to the top edge of the top plank gave the proper slant for the covering board support. When all were in place they held the covering board at its proper slant toward the center of the boat, and in its proper curve to coincide with the sheer line. Decks and covering board, covered with canvas, and two fender moldings, were put on in the conventional manner.

The installation of motors in boats has been so often described that I shall tell only of details of the installation that differ somewhat from the conventional.

First as to getting the 375-pound motor into the boat, without tackle or shears, and without any help, from where it lay 30 feet distant from the boat. It was so easy it makes me smile even yet, as I think of it.

I merely reversed the method described earlier in this article used in removing the old motor. I removed the carbureter and intake pipe, leaving one side of the motor bare. Across the two engine support flanges on that side I bolted a two-by-four as long as the motor, and I was ready to go.

I laid it over on this side on to two 2 by 12 inch planks, well smeared with cup grease, pointed toward the boat. Then I dragged it along, first one end and then the other, till it was opposite the spot in the boat where it was destined to land.

Two more greased planks were then laid from the coaming of the boat to the spot where the motor rested, overlapping the coaming far enough so that when their outer ends were raised their inner ends would come to rest just short of the side of the engine beds.

All that remained was to continue the skidding process till the motor just balanced over the coaming, then raise the outer ends of the planks carefully till it slipped quietly down and rested against the side of the motor foundation in the boat.

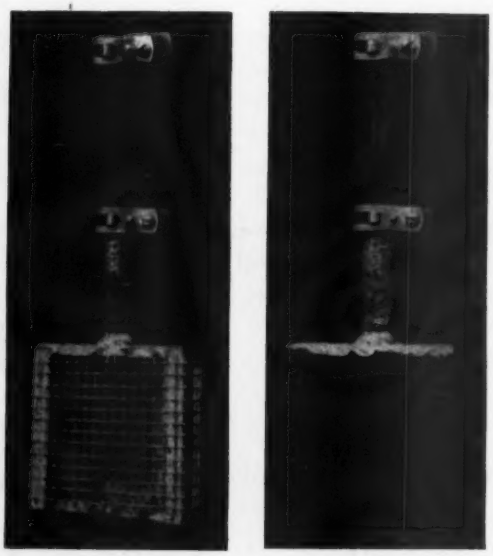
I then removed the two-by-four that had been bolted to the support flanges, and little by little eased the motor over and on to its foundation, and the job was done.

Later, when all aligning was complete, I had two men help me for about ten minutes in lifting the motor far enough that I might slide the drip pan underneath.

It was necessary to use a universal joint between the motor and tail shaft, and this brought problems, as I wanted to keep the motor as far aft as possible.

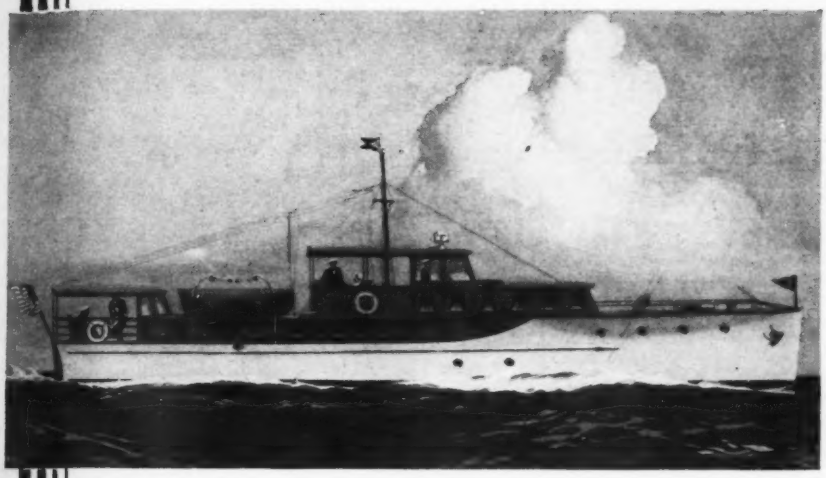
To cut down fore and aft

(*Continued on page* 144)



Bilge suction intake with course screen in place after fine screen was applied

You Have Always Wanted to Plan a Boat to Suit Your *Individual Requirements*



The **Humphreys 70-Footer**

now in construction awaits your instructions as to arrangements, furnishings, fittings and finish.

THIS ship, powered with two latest-type Diesel Engines, expresses the most modern trend in naval architecture, and embodies sound and proven structural features, plus the comforts and conveniences of a boat double her size. Speed up to 16 m.p.h., with a cruising radius of 2,500 miles.

Extremely heavy construction throughout. Double planked with cedar and mahogany, with canvas between, copper fastened. Bright finished white pine decks with chromium plate deck fittings and guard rails give added beauty to this superb craft.

Accommodations (which may be altered to suit individual requirements) include: Deck saloon paneled in American walnut; large double stateroom for owner full width of ship, with connecting bath; two single staterooms and one double stateroom, with bath or shower; galley full width of ship, with electric refrigerator and oil-burning stove; crew's quarters, with toilet and shower, in forecastle for four men.

All controls are centralized on the bridge. Diesel auxiliary lighting plant, electric ventilating system and fans, electric windlass and bilge pump are a few of the many desirable features furnished at no extra cost.

You may inspect this boat any time at our Keyport, New Jersey, plant, or procure further information from our New York Office. Delivery can be guaranteed before June 1st, 1930.

FREDERIC P. HUMPHREYS INC.

230 Park Avenue — New York City

HUMPHREYS

Cable Address: HUMPFRED

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What more timely! Your announcement to Detroit's vast population of yachtsmen and boating enthusiasts concurrent with the Detroit Motor Boat Show. Besides its regular circulation of 4,300, the D. Y. C. MAIN SHEET offers you the added inducement of another 6,000 copies circulated during the Detroit Boat Show. No increase in rates. Space reservations taken now. Closing dates March 15th to 18th.

W. D. EDENBURN, *Editor*
5-218 General Motors Bldg., Detroit

The Main Sheet

NAVAL ARCHITECTS FORESEE BIG YEAR

(*Continued from page* 18)

these are for Jeremiah Milbank and George W. Moffett, and are 75-foot twin-screw express cruisers, for which type of boat Wells has established quite a reputation. Power plants in these sister ships will consist of pairs of 500 h.p. Winton gasoline motors capable of driving the boats at approximately 28½ m.p.h. The third of this trio is scheduled for delivery to Arthur E. Wheeler and is the second yacht designed by Wells for Mr. Wheeler within the last year. This vessel will be 136 feet overall and will be equipped with a pair of 275 h.p. Winton diesel motors which should give her a cruising speed of 13 knots.

Among the more recent orders is one from a well-known eastern yachtsman, to be 153 feet in overall length. She is now building at the Defoe Boat and Motor Works and will be equipped with two 400 h.p. Winton diesel engines.

Besides these actual orders the Wells Company is actually working on several sizable proposed diesel yachts as well as a few gasoline-driven boats of moderate size, so it is quite evident that they have abundant work on hand to keep their organization working at top speed.

FREDERICK P. HUMPHREYS

Frederick P. Humphreys has a number of large boats under construction slated for spring delivery. The largest of these, recently completed, is a 140-foot diesel cruiser. The next largest that they are building at Keyport is a 111-footer for Alfred Cernadas of Buenos Aires. She is of wooden construction, double planked cedar and mahogany, and while she is somewhat on the houseboat type, nevertheless is designed to make the passage to Buenos Aires under her own power. The power plant consists of a pair of 200 h.p. Winton diesels with reverse gears specially designed in order to make possible complete pilot house control. The main salon is 40 feet in length with a full-size bar at one end as one of the unusual features. She is now rapidly nearing completion at their Keyport yard.

They also have under construction a 70-footer for N. T. Guernsey, vice-president of the New York Telephone Company. She is rather unique in the fact that she is built to Lloyd's highest classification and under their supervision. She is also a double planked job with teak decks and joiner work. The power plant consists of a pair of 150 h.p. Winton diesels, the controls of which are centralized at the bridge.

Another fine craft is a 55-foot Diesel express cruiser for James H. Ottley of the New York Yacht Club who plans to use this boat for commuting from Glen Cove as well as for a tender for his racing yacht. She will be powered with a 12-cylinder 300 h.p. Treiber Diesel which will give her a speed of 18 m.p.h.

A duplicate of this boat is also nearing completion for H. Steele Roberts of the New York Stock Exchange. A cruising speed of 16 to 17 miles an hour will be developed with a pair of 150 h.p. Treiber Diesels.

A great number of other smaller boats both diesel and gasoline powered will include cruisers to be delivered to George D. Pratt, Jr. of Glen Cove; A. H. Canfield, president of the Canfield Rubber Company of Bridgeport; Herbert A. Mason, Erie, Pennsylvania; Mrs. John Jordan, Jr. of Erie; George Smith, president of the Royal Typewriter Company; and a steel patrol boat to be used on Lake Titicaca, Bolivia.

ELDREDGE-McINNIS

A great number of boats from designs by Eldredge-McInnis are in course of construction in six or eight different yards in various parts of this country and Canada. At Southwest Harbor, Maine they are building a 56 by 13-foot twin-screw express cruiser for Richard Harte of Boston; the builder is Chester E. Clement. This boat is a double planked mahogany clean sheer type with a large forward cockpit cabin house and another aft giving sleeping accommodations for six persons and a crew of one. The power plant will consist of two 6-cylinder 290 h.p. Sterling Dolphin specials which will provide an anticipated speed of 26 m.p.h.

At T. H. Soule's yard at South Freeport, Maine they have under construction two of their standardized Eastward schooners and four standardized Eastward Jr. yawls; these boats are all of the knockabout rig and are powered with 4-cylinder Gray motors. Two of the yawls are owned by Arthur O. Jennings and Hubert C. Morfey of Bridgeport, Connecticut. The schooners are 47½ feet overall, 11-toot 8-inch beam and 6-foot-5 draft while the yawls are 36-foot-9 overall, beam 9-11 and draft 5-foot-6.

F. D. Lawley's yard at Quincy, Mass., is building a 75-foot twin-screw express cruiser for Robert C. Ream of New York

(*Continued on page* 108)

Advertising index will be found on 3rd last page

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THE PANTASOTE COMPANY
Incorporated
250 Park Avenue
New York

NAVAL ARCHITECTS FORESEE BIG YEAR

(*Continued from page* 106)

City. This boat is practically a duplicate of such boats as Ballkim, Seyon, Sazarac, etc., and is powered with two 7 by 8¼ six cylinder Winton gasoline engines to make a speed of 18 miles an hour. Another Eldredge-McInnis designed boat delivered from the yard of F. D. Lawley is a 50-foot twin-screw express cruiser for Howard Bonbright of Detroit; this boat is powered with two Sterling Dolphins of 250 h.p. each which drove her at a speed of 27½ m.p.h. on her trial trip.

A 125-foot auxiliary diesel schooner from their design has just been delivered from the Neponset, Mass. yard of George Lawley & Son. This boat is now in the South for an extended trip to the West Indies. She was of exceptionally heavy construction and had for her main propelling plant a 250 h.p. 6-cylinder Winton diesel engine. Practically all of her auxiliary equipment is Winton and she has proved herself to be an exceptionally able and fine all-around vessel.

Lamb & O'Connell, Inc. of Squantum, Mass. are building a 50-foot twin-screw express cruiser for Amory Coolidge of Boston. She will be practically a duplicate of the 50-footer that Fred Lawley built for Eldredge-McInnis this spring and will be powered with two 250 h.p. 6-cylinder Sterling Dolphins to make a speed of 27 miles an hour or better. Mr. Coolidge's boat will be used extensively for swordfishing during the summer off Block Island and she is rigged with many unusual and novel ideas. The other Lamb & O'Connell boat is a 46-foot motor sailer for Gilbert H. Gleason of Boston. She carries a 6-cylinder Hall-Scott with 3 to 1 reduction gear. She is a 50-50 job, half sail with a ketch rig and half power.

A 47½-foot Eastward type schooner is building for F. H. Gardiner of Beverly Farms, Mass. at George F. Lawson's yard in Dorchester; this boat has a regular Eastward hull but has been rearranged inside to suit the owner's special requirements. The draft has been cut down to 5½ feet and the main propelling plant is an F-4 Scripps.

Minett-Shields, Ltd. of Bracebridge, Ontario are building two boats from Eldredge-McInnis designs, one a 50-foot single screw bridge deck cruiser for Charles Millen of Hull, Ontario and the other a 56-foot express cruiser for G. T. Fulford of Brockford, Ontario. Mr. Millen's boat is a comfortable conventional cruiser powered with an 80-horse 6-cylinder Cummins diesel. Mr. Fulford's boat is a double-planked express cruiser powered with a 12-cylinder, 500 h.p. Wright Typhoon which is expected to give her a speed of 25 miles an hour. Both of these will be delivered in June and will be used in Georgian Bay and the upper reaches of the Great Lakes.

A twin-screw express cruiser 73 feet in length generally similar to Sazarac and Ballkim is building at Defoe's yard at Bay City, Michigan. This boat is for R. E. Klages of Columbus, Ohio and will be delivered to him at Bay City some time in May. Her power plant consists of two 350 h.p. Winton gasoline engines to give her a speed of 22 miles an hour.

Besides these, Eldredge-McInnis are building in scattered places throughout the world the usual run of small boats which includes cruisers from 26 to 40 feet going up in New Zealand, British Columbia, Argentina, Cuba, Texas, Scotland, England, Finland and China.

J. MURRAY WATTS

J. Murray Watts while occupied principally during the last few years with the design of large commercial vessels have also prepared the plans for a number of smaller pleasure craft. Among the yachts recently completed from their designs might be mentioned J. S. Wilford's 47-foot auxiliary cutter, Windrush; the 56-foot centerboard schooner, Malabar, for Christian Johnson of Greenwich, N. J.; and a 51-foot cruiser, Alfrieda, for Gustav

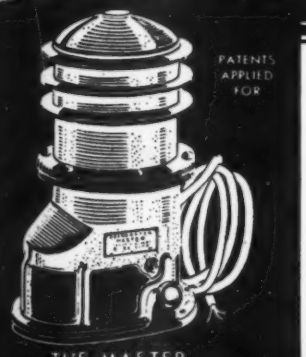
New boats now under construction include a 51-foot cruiser. Analsa, equipped with 150-hp. Lathrop engines, now being built for Samuel Sloan of Southport, Connecticut by the Seaford Shipbuilding Co. Another is a 45-foot cruiser equipped with two 90-h.p. Buda motors, building by Charles Stowman & Sons. There is a 50-foot cruiser with two 85-h.p. Kermath motors for O. F. Mitchell; a 64-foot houseboat; an auxiliary sloop; and a 50 by 13-foot schooner building in Porto Rico.

Among the boats they are now designing for next season there is a 60-foot by 14½-foot schooner yacht for a Dr. I. W. Gaston of New Orleans; a 74 by 15 Treiber diesel cruiser for an Atlantic City yachtsman; a steel diesel yacht for Colonel A. L. Kuhlman; a 75-foot ketch for Frederick G. Wacker; a 75-foot diesel cruiser with two 300 h.p. Treiber diesels for P. C. Dubbs; an 80-foot auxiliary square topsail schooner for James Garvey of Los Angeles; a 160-foot steel diesel cruiser Barfuss.

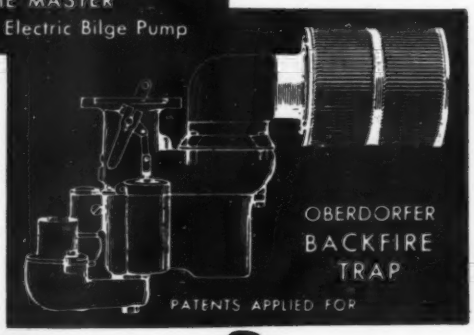
(*Continued on page* 110)

Advertising index will be found on 3rd last page

Fit out your boat with Oberdorfer Equipment



THE MASTER
Automatic Electric Bilge Pump



Now is the time to make your annual excursions to the shipyard to give your orders for fitting out your boat. Oberdorfer equipment is important to consider from the standpoint of safety, convenience and protection.

The Oberdorfer Automatic Electric Bilge Pump will keep bilge water pumped out night and day . . . a convenience you'll appreciate many, many times during the season. The "Master" model comes in 6, 12 and 32 volt units, the Improved Model "B" in 6 and 12 volts.

The Oberdorfer Backfire Trap is an Underwriters Approved device that should be installed on the carburetor of every marine motor, new or old. Built of non-corrosive metals to marine specifications, it traps and kills the flame from a backfire, removing all danger of fire from this source.

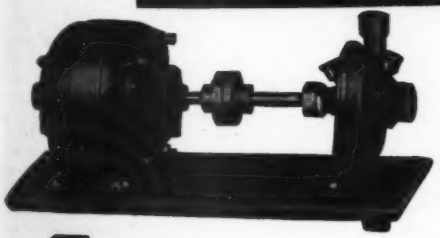
An old motor can be pepped up amazingly by installing an Oberdorfer Bronze Gear Circulating Pump . . . available in all standard types, forms and sizes.

Oberdorfer Motor Driven Outfits with gear or centrifugal pumps are used for many purposes. Oberdorfer Hand Bilge Pumps are positive and efficient.

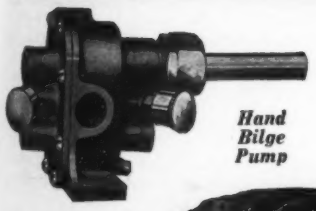
Give instructions for installing these Oberdorfer devices on your boat now in order to obtain fullest enjoyment when the season arrives. Available at all marine supply dealers.

Write for descriptive material.

M. L. OBERDORFER BRASS CO.
Makers of Pumps Since 1875
2200 Thompson Rd., Syracuse, N. Y.



Motor Driven Centrifugal Pump



Hand Bilge Pump

BRONZE GEAR CIRCULATING PUMP Type A, Form X, Code AXE

Oberdorfer Pumps

GREAT IN THE SHOWROOM

GREATER IN THE AIR

NICKELED fittings, artistic color combinations and polish add brightness and attraction to the showroom dress of any airplane. » Yet airplanes that are great in the showroom must prove themselves greater in the air . . . to those who buy for durability, economical operation and faithful performance. » Spartans are great in the showroom . . . but greater in the air. Brilliant performance, positive control at all speeds, stability . . . these are not idle claims, but qualities that pilots admire in every Spartan. Price for price, performance for performance, quality for quality . . . Spartan offers the year's greatest value in fine airplanes. » Write for illustrated literature describing each Spartan model . . . see them at the All-American Aircraft Show, Detroit, April 5th to 13th.

SPARTAN AIRCRAFT COMPANY
TULSA, OKLAHOMA

Spartan biplanes are offered with the choice of three engines: The 225 h. p. Wright "Whirlwind Seven," the 165 h. p. Comet, and the 165 h. p. Wright "Whirlwind Five." Prices, fully equipped, range from $7750 to . . . . . $5675 fly away Tulsa

NAVAL ARCHITECTS FORESEE BIG YEAR

(*Continued from page* 108)

for John M. deBrot of Curacoa; a 50-foot auxiliary cutter to be built in Italy; and a twin-screw cruiser for Charles E. Biddle of North East, Maryland.

TAMS, INC.

Tams, Inc. of New York City are also busy with many new designs. Avalanche II is a 154-footer from their boards recently built by Consolidated and powered with two 600-h.p. Winton diesels which provide a speed of 17 miles per hour. Delivery was made to the owner Anson W. Hard on April 1 from the yard of Consolidated.

Thomas M. Howell will take delivery in September of the 160-foot Thalia. Like Avalanche she will be powered with a pair of 500 h.p. Winstons and will have a speed of 17 miles per hour. She was built by Defoe.

Sylvia M. is a 129-footer powered with two 375 h.p. Winton diesels which give her a speed of 16 miles. George Lawley & Sons Corporation are building her and delivery to the owner A. C. Murphy is scheduled for September.

Monatowana is a 24-miler built by Ditchburn for E. G. Noble. She measures 83 by 14½ feet and carries a pair of 450 h.p. Liberty engines. She was delivered last November and is now in use in Florida.

Another delivery recently made to Florida was A. E. Walbridge's 50-foot Raida, built by Consolidated and powered with a pair of Sterling Petrels which drive her 22 miles.

A 90-foot auxiliary sloop is scheduled for early spring delivery, being built by Nevins for Warren G. Ackerman and powered with a Sterling Petrel.

Plans are also being prepared for two express cruisers, contracts for which have not as yet been awarded. One is a 70-footer with a pair of 850- h.p. Packards and a speed of 48 miles per hour and the other is a 65-footer with two 170 h.p. Speedways to develop 20 miles an hour.

CONSOLIDATED SHIPBUILDING CORPORATION

The Consolidated Shipbuilding Corporation are designers and builders of all sizes and types of boats ranging from a yacht tender up through the commuter, cruiser and diesel yacht classes, all of which are executed on order to meet individual requirements. In addition they build the well-known line of Speedway gasoline engines as well as the 300 h.p. diesel. The past year was a banner one for Consolidated in all its branches. In new boats they turned out the first yacht to be powered with their new diesel engines and results of its performance have shown it to be equally as successful as the Speedway gasoline plant. For 1930 they anticipate the largest year in their experience. Three steel diesel yachts are now in process. Fifteen others in wood, gasoline-powered, with the exception of one which will have diesels, are under construction, all of which will be completed and delivered before July 1. Gasoline engine sales for January doubled that of January, 1929, which is a pretty good indication that Consolidated's business, not to mention the industry as a whole, is in a sound, healthy condition.

SECOND INTERNATIONAL VENETIAN REGATTA

The International Motorboat Races in Venice, Italy, held for the first time last year have been established as a regular part of the autumnal season and announcements have been received of the program for September of this year.

The dates, September 17 to 21, have been carefully chosen so that those entering for the Detroit races will have sufficient time to ship their boats from Detroit to Venice.

Free transportation of all boats entered for the races has been arranged from New York to one of the Italian ports and return. Thus an entrant for the races in Detroit can ship his boat via the S. S. Roma of the Navigazione Generale Italiana Line on September 6, reaching Genoa on September 16.

The races will be run under the rules and regulations governing the U. I. Y. A. and the F. I. N. In addition to the classes outlined in the program there will be the Field Cup races for outboards, races for boats up to 6 litres and for boats up to 12 litres.

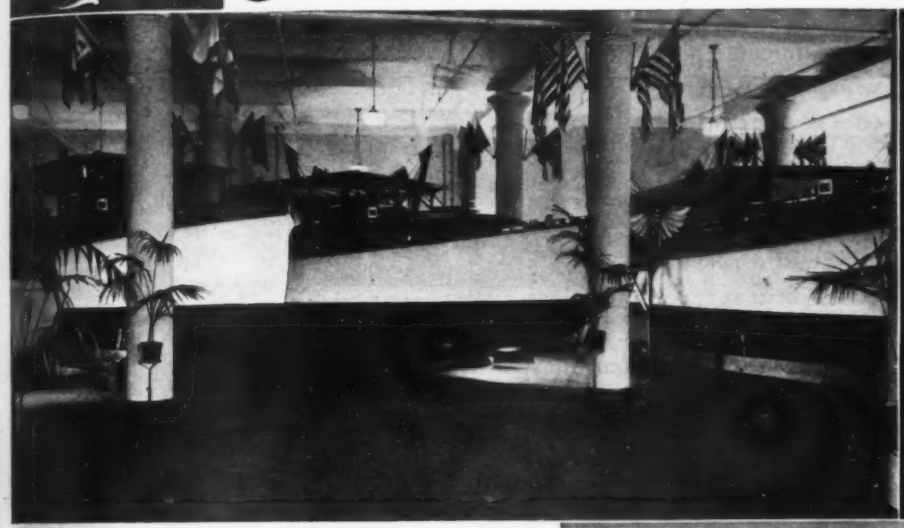
Prizes and cups to the amount of 300,000 Lire (about $15,000) are offered this year by the committee, which consists of many important members of the Italian nobility, with the Crown Prince of Italy as chief patron.

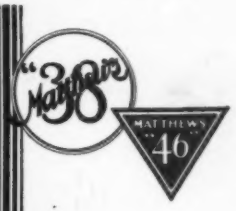
The Executive Committee consists of M. Gaggia, president; Marquis Dal Pozzo, vice-president; Count Revedin, Count Brandolin d'Adda, M. Stucky, M. Campione and M. Paolo Milone, secretary.

Advertising index will be found on 3rd last page

On Display!

The New MATTHEWS CRUISERS



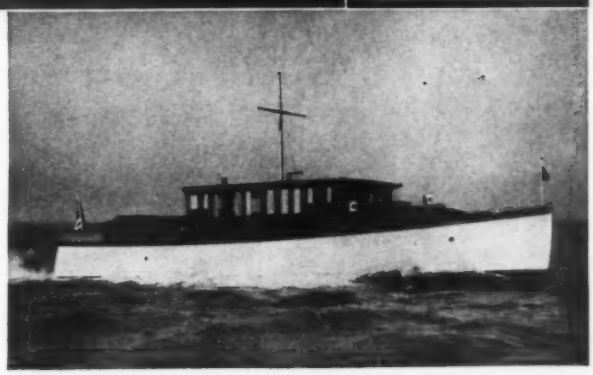


Matthews Cruisers
On Display
Bruns, Kimball & Co.,
5th Ave. & 15th St.,
New York City

You'll Find a Matthews Dealer Conveniently Located to Serve You

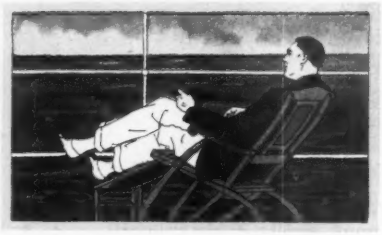
The Barret Company
112 Second Street, Louisville, Ky.
Belle Isle Boat & Engine Company
8777 E. Jefferson Avenue, Detroit Mich.
Boardman & Flower
1740 Van Ness Avenue, San Francisco, Cal.
Bruns, Kimball & Company
Cor. 5th Avenue & 15th Street, New York City
Lake Erie Yacht Brokerage Corporation
1365 W. 117th Street, Cleveland, Ohio.
Wm. V. Masson
1619 Baltimore Trust Bldg., Baltimore, Md.
Matthews Florida Branch
17 McAllister Arcade, Miami
Mississippi Valley Yacht Sales
Times Bldg., Alton, Ill.
Walter H. Moreton Corporation
1045 Commonwealth Avenue, Boston, Mass.
J. A. Scarlett
436 East 2nd Street, Cincinnati, Ohio
R. Sealy
Commerce Bldg., Galveston, Texas
The Sebo Boat Company
3206 Main Street, Houston, Texas
Robert V. Staats, Inc.
675 S. Park View, Los Angeles, Cal.

THE MATTHEWS COMPANY
Boat Builders of Distinction . . Since 1890
Port Clinton Ohio

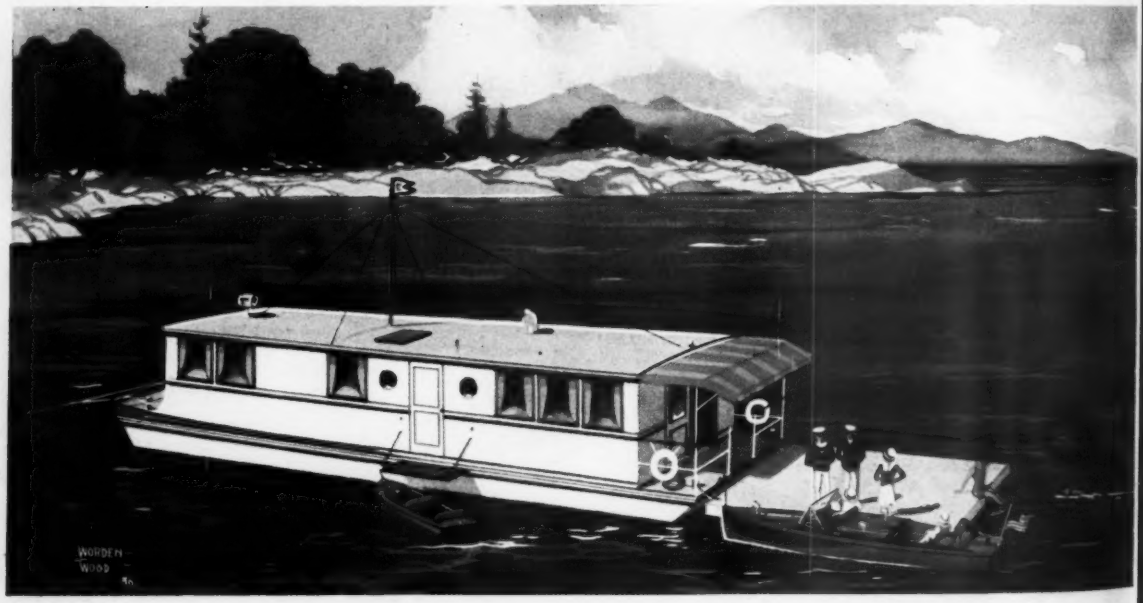


THE Matthews dealer organization reaches from Coast to Coast from the Canadian Border to Mexico's Gulf—with men of integrity selected for their knowledge and practical boating experience. For 39 years Matthews have faithfully served American yachtsmen. They continue with a series of 10 handsome 38 and 46 foot Cabin Cruisers famed for their husky design, stout performance, and remarkably low price. To learn firsthand of the seagoing qualities and inbuilt comforts designed into a Matthews hull you have but to ask any old-time experienced yachtsman—or consult the Matthews dealer nearest you and make your own appraisal.

HAVE YOU EVER THOUGHT OF A HOUSE BOAT IN THIS WAY?



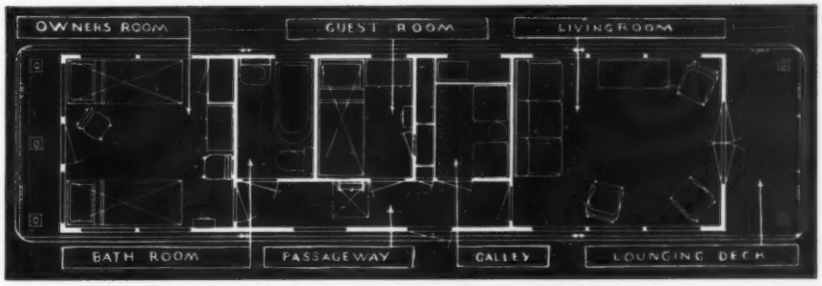
A place of perfect contentment. A place where you may enjoy the restfulness of complete solitude or, with your changing mood, where you may entertain a score of guests in a manner that gives a new meaning to the word "hospitality." Your house boat is your inexpensive summer home. Not cramped and uncomfortable, but really spacious rooms. Here are comfort and convenience; cool days and perfect nights. A place to read, or dance, or swim, or loll. No dust or fumes to sully the soft, salt air. The starry sky for your canopy at night, the wide blue sea for your back yard. A house boat needs no real estate for no one owns the water. Take it where you like, when you like. Anchor for a day or a week or a summer. Inexpensively stored in the winter; a coat of paint your only up-keep cost. What a place for children to enjoy the water in complete safety! What a delightful setting for a honey-moon or a summer-long anniversary. What a wonderful way for sportsmen to pursue the elusive bluefish by summer and the high-honking duck in the winter. What a guarantee of health and sound enjoyment.



Advertising index will be found on 3rd last page

• THE FIRST LUXURIOUS LOW PRICED HOUSE BOAT

Heretofore, most house boats were built to order at prohibitive cost. It remained for the American Boat Corporation to build a house boat of standardized design but allowing such elasticity of decoration and arrangement that a maximum of luxury may be secured at comparatively small cost.



Standard arrangement of houseboat, as illustrated, showing the spacious stateroom and guestroom, the really luxurious living room, and the galley, bath, and passage.

The A. B. C. boat is 45′ long and of 11′ beam. It draws only one foot of water, therefore may be moored in almost inaccessible spots . . . yet it is so sturdily and heavily built that it may safely be taken over long distances and through rough water.

The A. B. C. house boat is finished in a standard combination of colors, standard type, but, for those who desire a different combination of colors, we will finish a boat *without extra cost* in any desired colors.

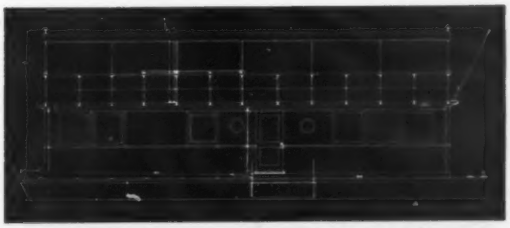
The accompanying blue-print shows an owner's stateroom 11′ x 9′ 6″; a guest room; a wonderful living-room, 11′ x 12′; a beautifully appointed bath, with shower; a large galley; a passageway; and a roomy lounging deck. The boat is ready to launch, unfurnished. Through special arrangement, the services of experienced interior decorators are available at a fraction of their customary fees. If desired, these decorators will completely equip your A. B. C. house boat and deliver it, ready in every detail, and at a considerable saving.

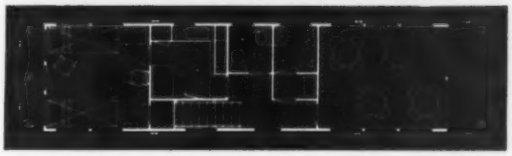
Write at once for complete description, as well as price and terms of payment. Mention whether you wish to use your craft as a house boat, a gun or fishing club, or for one of the other purposes shown herewith.

The same hull may be secured with different cabin for a variety of purposes. For example, a private, or club, floating dock providing space for many boats at a fraction of the usual cost.

EQUIPPED AS A TEA HOUSE

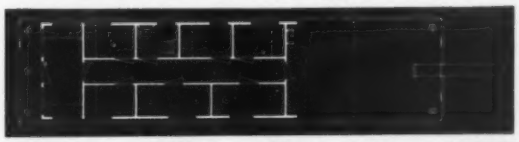
A real novelty for private entertainment or for an unusual business proposition . . . a floating tea house with room for four tea tables in the cabin and many others on an upper deck, 11′ x 45′. An opportunity to go into business without paying rent. Details of this novel plan upon request.





CLUB OR PRIVATE BATH HOUSE

Oftentimes there are good bathing facilities, but no beach or bath houses. Here is a way to meet the proposition conveniently, inexpensively and with a maximum of comfort. Blue-print and details upon request.



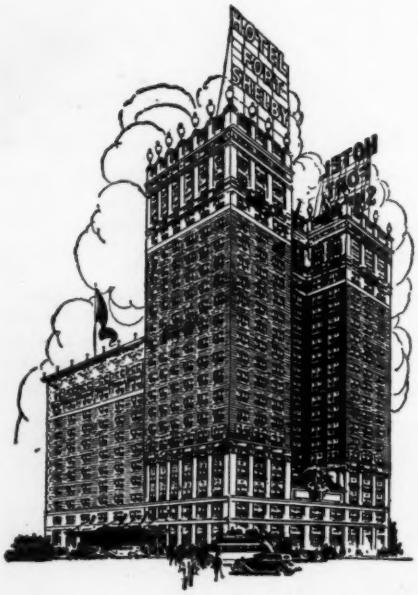
AMERICAN BOAT

CORPORATION, Inc.

S. CLYDE KYLE, *Vice-Pres. & Genl. Mgr.*

GENERAL MOTORS BLDG., 1775 BROADWAY NEW YORK . . . CRUISERS FROM TWENTY TO FIFTY FEET · COMMUTORS · SPORT CRUISERS · SAILING YACHTS · SMALL BOATS

All Downtown Detroit is Practically at the Door



Adjacent to theatrical, financial and recreational centers — yet removed from the bedlam of metropolitan activity, the Fort Shelby is advantageously located. All the comforts and services of the most modern hotel are provided here—with this addition: *an alert, congenial anticipation of your needs.* When the door of your room is closed, all is peaceful — quiet. Servidors eliminate even momentary intrusion.

Plan a schedule of amusements, wire your selections, and we'll have tickets to theaters, concerts and sporting events reserved when you arrive. Booklet and direct route to hotel supplied on request. RATES: $3 A DAY AND UP.

Main routes run either directly to or in the vicinity of this hotel. Competent attendant promptly takes care of your car. J. E. Frawley, Managing Director.

HOTEL
FORT SHELBY

LaFayette and First
DETROIT

CHRIS SMITH MASTER BOAT BUILDER

(*Continued from page 23*)

hundred to people all over the world. It was an unheard of idea. It was an idea such as Henry Ford harbored and finally lived.

Few people knew anything about pleasure boats in 1922. The general opinion regarding motor boats was that they were dirty, greasy things, which ran when they chose, and required two or three expert mechanics at work on them always. True, this is almost what they were, but in addition to being unreliable they were expensive. A man had to have a mint of money to own and operate one. Consequently, only a very few ever saw the cockpit of a fast motor boat in those days.

Old Chris knew all this. For all his lifetime he had lived in and around boats. He knew they were no things for good clothes. He called all his family together on this warm Summer day, when plans were just being made for this great adventure, and told them: "The biggest thing we've got to do in this boat building plant is to make a boat which will be clean. A boat that even you, Catherine, can run if you want to, with a party dress on. Then after we build this boat we've got to show others that it is different from any motor boat they ever saw or heard of. Then we'll sell boats."

His sons, gathered round, looked at him not quite believing that such a feat was possible. Those self-same sons who had built and labored over the world's fastest boats, who had known only grease and dirt in those racing boats. They looked again at their father to be sure they had heard him aright.

"We'll build a clean boat, and we'll build a safe boat. We have always kept our boats right side up, but this new one will be one that will be non-capsizable. We will make it so the most incapable driver and the roughest seas combined will not be able to upset her. It will ride the way boats should—it will be the perfect boat."

Back to their shop they went and began to lay out the plans for the first real stock boat. They decided, as a result of all their experience, that a boat about 26 feet long would be the ideal length for their craft. So they drew the plans and started to cut out the timber for the boat that was destined to become Chris-Craft No. 1. When they laid the memorable keel in boat No. 1, the trademark had not been evolved. They were busily engaged in planking the sides of the hull one day when daughter Catherine came bursting in to the shop. "I've got a name, Dad," she said, "your name is Christopher, why not call our boats Chris-Craft?"

Number 1 became the standard model Chris-Craft and not long after it was finished a Detroit merchant heard about it, came up to see it, and finally bought it. So far their venture had been a success. But it is interesting to note the changes Chris made in the lines of that boat before No. 2 was begun. Then when No. 2 was finished her performance was watched again before a buyer was found, and back again to the drawing board went the indomitable designer. He was not satisfied yet. As a matter of record, not one of the first twelve boats that came from the shops of Chris Smith & Sons were the same. Each new one had slight changes and additions, calculated to make her a more reliable boat. Number 12, though, brought a slight smile of satisfaction from her designer, as she slid smoothly into the water for her first dip. She rode like a duck, trimmed beautifully and struck a resounding chord somewhere deep within Chris as he stood watching her. He felt that he had accomplished something.

The engine had been covered over and separated entirely from the rest of the boat. And consequently there was no flying grease or oil odors about. The controls had been placed well forward of the engine compartment so that the driver could see where he was going. Before this they had to be in back, and when the bow rose up, the driver's view was cut off. Consequently, the owners were not running into things, driftwood, etc., all the time now. The controls were made as much like an automobile as was possible, because Chris reasoned that automobile owners would be the first logical buyers of their boats. They would do well to make it as easy for them to learn as possible. And throughout the boat there were refinements that made these boats the outstanding development of the times.

What appealed to most people was the wood they were made of. Clear mahogany throughout, finished outside to a bright luster, every Chris-Craft that came out of the shops looked fit to grace a parlor anywhere, along with the grand piano. Coat after coat of clear amber varnish was laid on these slender craft until you could almost see yourself in it.

"We will be builders of all-mahogany motor boats," said Chris, "and we will be the world's largest."

Such a simple thing to do—to decide that you will be something, and then go out and do it. But how different it is in actual life. Many times we see young men who are going to

(*Continued on page 116*)

Advertising index will be found on 3rd last page

THE FEELING OF SECURITY

Wonderful weather and a reliable pleasure craft! Whether your boat is a luxurious yacht or a dashing speed boat, "Auto-Lite equipped" gives you the feeling of security.

Marine designers and manufacturers take the utmost care in choosing the correct and finest electrical system. That is why so many specify Auto-Lite.

At every port of importance you will find efficient Auto-Lite specialists in starting, lighting and ignition. The Electric Auto-Lite Company, Office and Works: Toledo, Ohio . . . Also makers of Dé Jon.

AUTO-LITE

STARTING • LIGHTING AND IGNITION

For the boats that bloom in the spring, *tra-la*

TWENTY of them helped the Graf Zeppelin girdle the globe... twenty four of them power the largest airplane in the world... the Dornier Do-X. All of which means that if such monarchs of the air depend on the Robert Bosch Super-Energy Magneto, so should you.

Of course if you're satisfied to take a chance on spoiling a day's outing, a less reliable ignition system will do. But if you want to forget your magneto for the summer, be sure to install a Robert Bosch Magneto this spring.

This magneto was meant to go to sea, for it is waterproof, damp-proof and needs no old fashioned covers to protect it. It is the magneto that *modernized* magnetos.

Have you seen the 1930 Robert Bosch Catalog for motor boats? Full facts about the Robert Bosch Super-Energy Magneto. Full facts about the Robert Bosch Vibro-Balanced Horn, the most popular motorboat horn. Full facts about Robert Bosch Pyro-Action Spark Plugs. We'll be glad to send you a copy on request.—Robert Bosch Magneto Co., Inc., 3603C Queens Blvd., Long Island City, New York.

All Robert Bosch Products bear the full name "ROBERT BOSCH" and this trade mark of Robert Bosch A.-G. . . . . .

Robert Bosch
Super-Energy
Magneto

CHRIS SMITH MASTER BOAT BUILDER

(*Continued from page* 114)

be something or do something, and that is the last we ever hear of them. But when a man triumphs over an idea, it is indeed a great thing. Chris Smith is just as human as you or I, and when you go out there to his great boat plant in Algonac, and meet this common everyday man, you are surprised. You had looked for a sort of super man, a man who by his very physical qualifications could triumph over obstacles. But you would probably find this chairman of the Board of Directors in an old hunting shirt, in a pair of rubber boots, striding around some inconspicuous part of his premises.

One of the most interesting stories this man tells is of the party of millionaires that came out from Detroit one day to buy a boat. It so happened that they arrived at the plant on a Sunday when there was no one around but old Chris. He was, as usual in an old pair of trousers and slouch hat, sitting by the office door with his faithful dog, Jack, at his side. The gay party from the city marched boldly past Chris and on into the office in search of someone from whom they might buy, or at least see a boat. No one was around except Chris. Out they came and asked, in their eagerness if there was anyone around who could show them through the plant. "I will," says the laconic Chris, as he picks up a stick and motions for them to follow. Then followed a minute exacting description of all the processes incidental to the building of their boats, and finally a trip out on the river, in one of the boats. When it was all over, and they were back at the office again, one of the men could contain himself no longer and broke out to Chris: "You must have been with the company a long while to know so much about the way they build boats here."

"Oh, I have," remarked Chris in an offhand way.

"Well, we certainly are sorry not to see Chris here today, as we really wanted to order a boat. But will you tell him that the Van Ripers came out to look at a boat today, and really think he builds a wonderful boat."

Surely Chris would tell himself that as soon as he had a chance to talk with himself. And so the people got into their car and went away, never knowing they had been with that same person, of whom they talked so glibly, for over an hour. But that's Chris Smith, the practical joker. There is always something happening in daily life around the plant which he will comment on in such a humorous way that his employees have come to love him and revere him like a father. Incidentally, the Van Ripers sent their order in by mail the next day, and the joke of old Chris, did not cost the company an order, after all.

So far they had been selling boats as they built them right from the factory. True they had invested in a little advertising, but old Chris couldn't see the advantages of magazine or newspaper advertising. And he was right, in a way, for once the desire to own a motor boat was aroused in the prospect, unless he lived near Algonac, it was almost impossible for him to carry on negotiations for a craft. It was a real problem that this Smith family was running up against, this question of marketing their product. And many a conference before the open fire of the long winter evenings was had. It was Jay, eldest son of Chris who finally voiced the thought that was deep within them all. "We must have dealers, father, all over the United States who will handle our boats. They must have the boats on their showroom floor. Then when we advertise, and we must advertise if we are going to build boats the way we intend to, the prospect will know just where to go to see our boats. In this way we will become nationally known, and only in this way, I believe."

That was the end of the conferences, the long discussion of their problem of selling Chris-Craft. The Smith family are like that. When once an opinion is voiced which each one knows to be sound, they silently nod their heads in approval and the subject is dismissed. Now all that remained was to go out and get those dealers that they had decided they must have.

It is a comparatively easy thing to sell a man something that he knows all about, such as a carpet sweeper. But to talk to dealers about motor boats in those days was almost equivalent to trying to sell dealers submarines, nowadays. They simply didn't know enough about boats to be interested in them. It was an educational task, all right, getting those first Chris-Craft dealers, and one which almost broke the Smith organization. Often when they would return after a week or two on the road trying in vain to sell dealers on their proposition, it would take all the courage and confidence of old Chris to keep them from giving up, then and there. It looked like such a hopeless task. Automobiles were in their heyday, and people were going everywhere in them. Roads were not congested as they are now, and touring was the order of the day. Why

(*Continued on page* 118)

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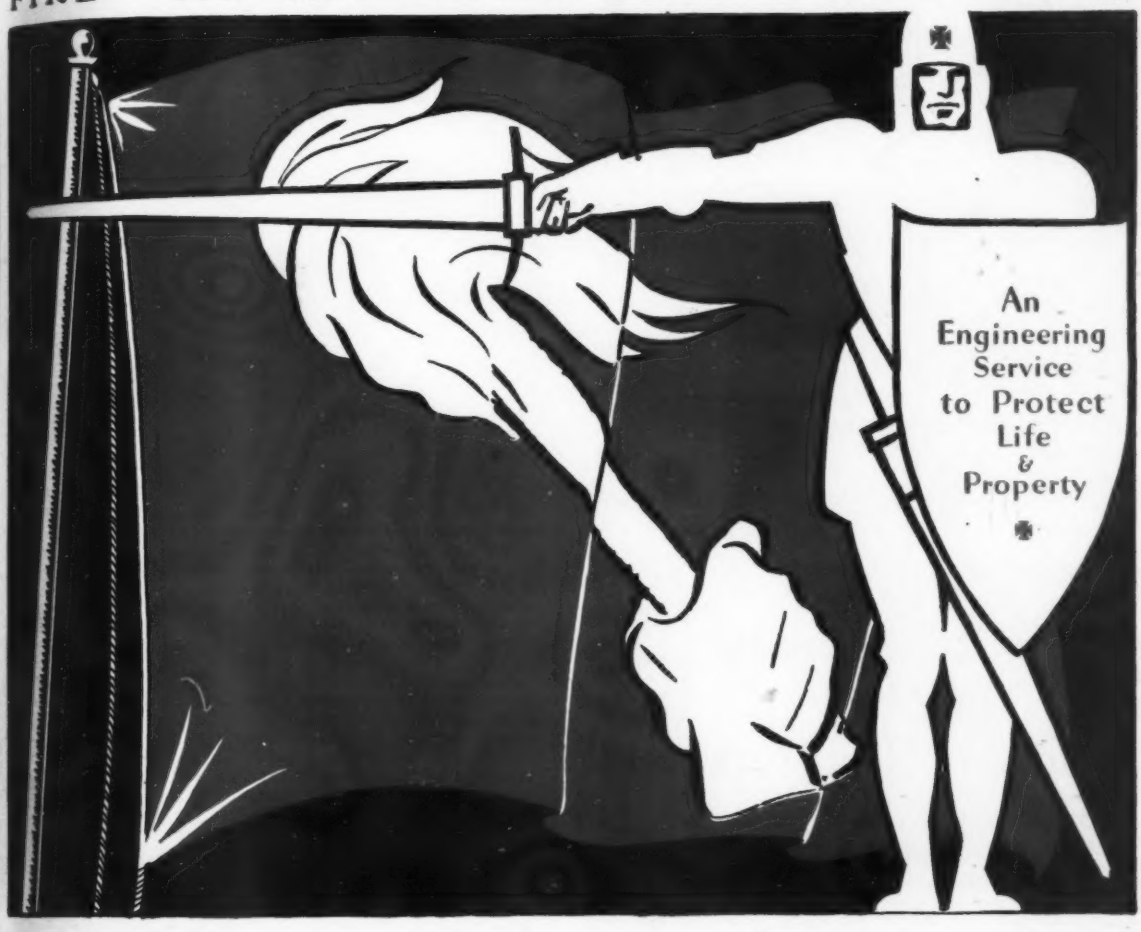
FIRE — AN INCIDENT OR A DISASTER ?



The pirate who runs up a red flag!

Pirates! Once the ruthless lords of the 7 seas—now only picturesque prisoners bound within the covers of books! All gone—all futile save one—the Fire Pirate who still sails wherever ships sail—waiting to run up his Red Flag and capture another victim!

Every boat that cuts its way through water—be it a de luxe express crossing the ocean—or a motor boat singing its way across an inland lake—needs ALFITE protection against Fire.

Fire is always an incident when the boat is guarded with an ALFITE system. As easy to operate as your steering wheel—simply pull a lever—the system goes into action and the fire goes out! Simple! Moderately priced! Infallible! Instantaneous!

American-La France and Foamite Corporation, Dept. S17, Elmira, N. Y. *Offices in all principal Cities.*

LA FRANCE AND FOAMITE PROTECTION

AN ENGINEERING SERVICE

AGAINST FIRE

"One Fire is Too Many" is a booklet telling the whole story in an easily understandable way. Send for it—it's free

Easy Adjustments Make 'em Paragon Boosters

THERE'S no "cussing" when the mechanic works on a Paragon High Speed Reverse Gear. Every part is made quickly accessible. And the boat owner hears praise for his engine in general, and for his reverse gear in particular. Every repairman—either owner, or mechanic—is friend or foe of the gear he's working on. Paragon makes 'em friends.

100% Oil-Tight Enclosed Models

The 90 Line PARAGON REVERSE GEARS

PARAGON GEAR WORKS
603 Cushman Street, Taunton, Mass.

CHRIS SMITH MASTER BOAT BUILDER

(*Continued from page* 116)

should anyone go out on the water when they could go on land, was the old favorite question the automobile dealers always put to them. And talk as they would of the pleasures and beauties of boating, the people paid no attention.

It was time alone which came to their rescue. Of course they did obtain a handful of representatives all over the country, but not enough to allow them to build boats the way Chris wanted to. But then about 1926 when there became so many cars on the road that people began to think about other ways of spending the Summer, their business began to pick up. Folks were tired of spending days in dust-soaked air on the congested highways. They looked for a solution to the traffic problem. And then it was that they discovered motor boats. The feeble advertising that Chris Smith and his sons had been doing at last bore fruit. They became the center of interest when the warm weather began to set in. People wanted their boats, and tragically enough they couldn't give them to them. They had not been able to foresee the sudden demand, and had none in stock. And it wasn't a question of turning them out overnight, for motor boats aren't built that way. They must refuse the orders, and this they did. Hard as it was, it taught them a lesson, and one that they never would forget. They would have to build early to anticipate the summer rush.

This they did, and by the time the next summer arrived they had perhaps two or three hundred boats on hand ready to ship out. And then the orders came, and out went the boats, every single one of them. They were building boats now, the way Chris had dreamed of, for years. Then, with the improved conditions they went after more dealers, and it is surprising how much easier it was now to get them than before. Automobile dealers welcomed a side line which they could carry without further overhead, and still give them a nice return. Sufficient to say that Chris Smith so built up his organization in those few years time that today he has over 200 distributors and dealers located all over the world. For these boats of theirs have become popular abroad too, and now a large percentage of their production goes to foreign countries.

Well, that brings the story of Chris Smith and his Sons almost up to date. Now their huge plants covering a score of acres in Algonac, produce thousands of motor boats every year. From that small insignificant start to the world's largest builders of mahogany motor boats is indeed quite a step. But to know Chris Smith the grand old man of the boat industry, is to know that all things are possible. He has lived a full life, this man, because he has done what he set out forty years ago, to do. Now his sons carry on, and he is content. They, following likewise in his footsteps have set new high goals for themselves, and it now remains for the future to decide, whether or not they shall have succeeded as did their father, Chris Smith of Algonac.

1,424,924 BOATS IN UNITED STATES

It is estimated that there is a total of 1,424,924 motor boats on the non-navigable and Federal waterways of this continent as compared with 1,356,006 a year ago. Although no accurate check can be made upon the number of outboard-powered craft or upon the number of boats on the non-navigable waters, figures compiled by the Bureau of Navigation show that there are 236,514 craft numbered and documented for use on the Federal waterways, which is equal to an increase of 9½ per cent over the total shown a year ago.

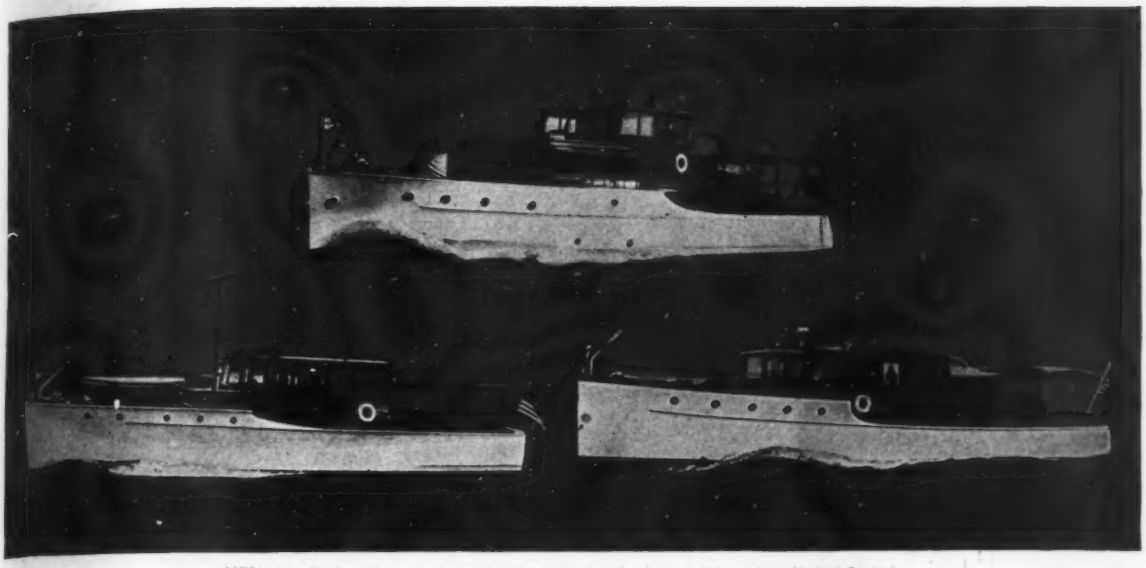
Upon the basis of manufacturers' production records, it is estimated that there are 400,000 outboards in use as compared with 350,000 a year ago and that there are 785,500 boats used on inland waterways as compared with 750,000 at the same period last year.

Inasmuch as the numbering system of boats was a war measure effected in 1918, no attempt was made to check those boats used in water not linked with streams generally utilized for commerce. Nor was the number of outboard boats of any great importance at that time.

As a result of the calculations made by the National Association of Engine & Boat Manufacturers, the information is compiled that there is one boat for every fifteen automobiles and by the same token, one boat for every 81 inhabitants of this country.

Private yachts, long considered by popular conception, as the exemplification of the motor boat industry comprise less than 1,000 of the great fleet now being used on American waterways. Whereas such boats probably cost an average price of $200,000, the 400,000 outboards represent an average expenditure of not more than $500 per unit and the cruisers probably not more than $5,000.

Advertising index will be found on 3rd last page



LUX is standard equipment on boats of 12 of the leading boat builders of the United States

LUX PROTECTION STANDARD

on These Three Boats

MANY yachtsmen build up a false confidence because they have never had a fire, but one need only glance at the newspaper headlines during the year to become aware of the number of fires on yachts and other pleasure craft. And one fire is enough to bring disaster.

Fire in the engine room or bilge of a boat is always ferocious. A hand extinguisher is useless against the leaping mass of flames that will flare up in gasoline and oil in a few seconds. No man can face the smoke and heat from such a fire... nor fight it successfully with a weapon far too small to do the job.

More and more, leading builders are equipping their boats with LUX Systems—sure protection against oil and gasoline fires. A pull of the control handle of a LUX System, and even the worst fires are smothered by dry, harmless LUX gas in a few seconds.

Install a LUX System in your boat this year. You will enjoy the unadulterated pleasure of yachting—with all fire hazard removed forever.

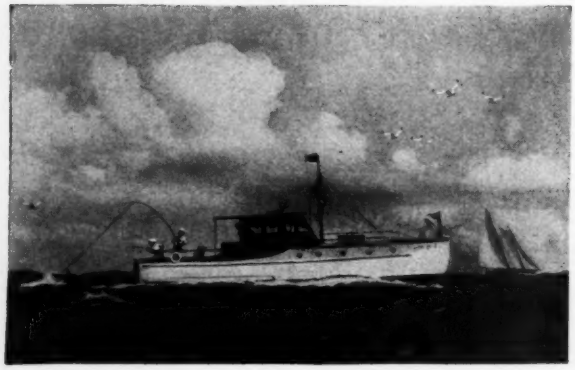
Walter Kidde & Company, Inc.
140 Cedar Street
New York

LUX

Fire Extinguishing System

LABELED BY UNDERWRITERS' LABORATORIES

The "DAUNTLESS 42"



For the Sportsman!

SHE'LL go anywhere any time you want her to! She has the speed necessary to get you out to the fishing grounds at the chosen time—the ability to stay out and take it when things get dusty. Forty-two feet of length, and every inch real boat.

The Dauntless 42 is most carefully built of selected materials and every detail in her has been thoroughly thought out.

The model illustrated above has comfortable double and single staterooms, galley and toilet, and an extra large cockpit. The enclosure at the forward end of the cockpit provides shelter in bad weather while the after part is all clear for the fishermen to swing their rods.

The engine beds will take a gasoline or Diesel motor and the boat will step along at better than 13 m. p. h. Extra large lazarette provides ample space for sail stowage should boat be used as a yacht tender. Large wheel turning approximately 1000 r. p. m. provides great efficiency for towing... Let us give you further interesting particulars.

MILLARD, BREWSTER & CHAMBERS, INC.

230 Park Avenue New York, N. Y.

NAVAL ARCHITECTS — *Telephone* VANderbilt 10167 — YACHT BROKERS

Cable Address—MILBRECH

New York Representatives: Noyes Marine Co., 305 Congress Street, Boston, Mass.

ALMOST READY FOR LAUNCHING

(*Continued from page* 25)

painted in order to protect it for another year's service. One of the first lessons which should be learned by all amateur boat painters is that one never applies a coat of paint to any material which is either cold or damp. It is always advisable to wait over an interval of a week's time between the scrubbing down operations and any subsequent repainting.

At this time, it might also be desirable to mention that a well studied list of all the tasks to be done should be prepared and later as the work progresses the several items can be checked off in order, so that the work goes on in a smooth and result-producing manner.

Perhaps the weather may not yet be entirely suitable to permit outdoor activities and at such times, the day can be profitably spent in going over the interior finish where necessary and brightening up the paint and varnish work. Many men confuse the work necessary on the inside of a boat, in that they assume that dirt and grime can best be removed by applying new coats of paint over the old and soiled surfaces. This notion is a mistaken one as a good scrubbing down will frequently restore a painted surface to an acceptable condition without requiring a new coat of paint. After all, it must be remembered that the purpose of the paint is a dual one. First and foremost, it serves to protect the material from the weather, and the effects of time, and secondly it decorates the surfaces to make them pleasing to the eye. It is desirable to avoid using too many coats of paint on any boat work. Excessively heavy deposits of paint soon begin to fill up the grooves in bulkheads and panel work and the niceties of a boat builder's work disappear under the successive layers of paint. Some times as happens on the exterior of a boat's hull, this paint deposit becomes so heavy that it shows ugly scars if a flake of paint chips out here and there. In such cases, it is necessary to remove the old paint entirely. This can be accomplished on both the interior and exterior of the boat by the use of some of the prepared chemical paint removers, or by the use of a flame generated in a gasoline blow torch or by the more modern method of using a special form of paint burning nozzle together with compressed acetylene gas which is most excellent for this work. The method of doing this requires some practice and skill. The operator who becomes careless will presently scorch a section of planking by not paying attention to his work or may even set the boat afire if he is not extremely careful. In use the flame from the torch is directed at a spot on the paint generally near one end of the boat. The torch being held in the left hand in such a way that the paint begins to blister indicating that it is soft. At this point the torch is slowly moved to the operator's left and the spot where the flame contacted is attacked with a wide bladed putty knife which scrapes the paint from the wood leaving the surface practically free of paint. The torch must be kept in motion constantly and be closely followed by the blade of the putty knife and in a surprisingly short time the work will be completed. A careful going over after the first and heavy deposit has been cleaned down will show some small spots which have been skipped and these can be removed also.

This method while it will prove successful on the top sides of a boat will not be found satisfactory for the underwater portions where they are painted with copper paint. These compounds do not yield to the heat of the torch and other means must be used if this portion is to be cleaned. It will generally be found, however, that the under-water portions do not require thorough cleaning down as this paint wears off in the course of the summer by reason of the occasional scrubbings which it should receive to keep the bottom clean while the boat is afloat. The method described will apply equally inside or out of the hull wherever the old paint body has been built up to an unusual thickness.

In connection with the burning down of the paint on a hull, an interesting suggestion has come to hand from Captain Carl Olsen of Menominee, Michigan. This deals with the use of the regular protane gas supply of the yacht's equipment which was attached to the burner of the ordinary form of gasoline torch. A pressure of about thirty-five pounds on the protane tank supplied a much better flame and with the use of some twenty-five feet of rubber hose a large area could be covered at a time without requiring any stops for refilling the small tank on the burner. This suggestion should prove very useful for this job in cases of boats equipped with a bottled supply of gas.

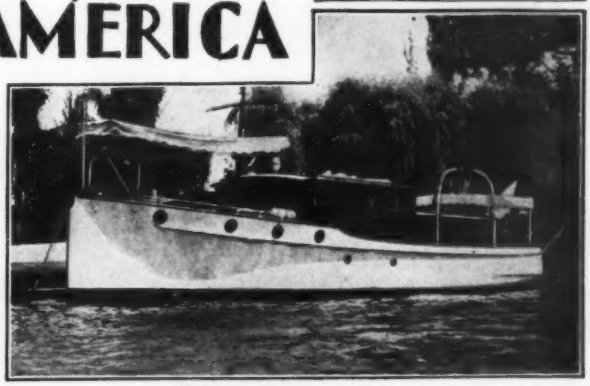
Sandpaper should be used liberally in smoothing up all surfaces before new paints are applied. The coarse grades will serve to dress down any roughness which may exist and the finer or finishing grades will smooth off the plank and woodwork to a nice smooth surface which can be easily painted over.

(*Continued on page* 122)

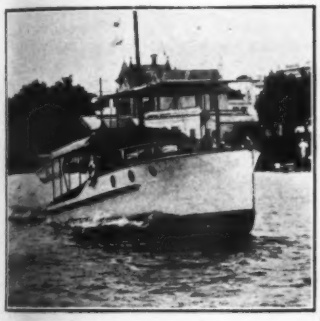
Advertising index will be found on 3rd last page

KERMATH *in* SOUTH AMERICA

The yacht "ARAUCANO," owned by Senor Arturo Zagazola of the Argentine. Powered with 100 H.P. Kermath 6-cylinder motor, with a speed of 16¼ miles per hour.



The handsome 48' cruiser yacht "MARAY" of Buenos Aires is twin-screw powered with 2 six-cylinder 65 H.P. Kermath engines, having a speed of 12½ miles per hour.



"CHUCHI 1" leaving Buenos Aires, with its Kermath 65 H.P. engine giving a speed of 12½ miles per hour. Owned by Senor Alberto C. H. Bodmer.

Kermath in South America

These illustrations show but a fraction of the many Kermath powered cruisers in South American waters.

Due to that day in and day out dependability and reliability established by 21 years of thorough going performance, Kermath's reputation for sound engineering design is now world-wide.

"Around the world with Kermath" could well be more than a mere advertising theme—for Kermaths are giving owner-satisfaction on almost every navigable water and in every sizable port throughout the civilized world.

Your own boating satisfaction can be made complete with the installation of a Kermath.

Write for descriptive literature covering Kermaths in the various power classes.

4 to 225 H.P. $295 to $2300

Kermath Manufacturing Co.
5879 Commonwealth Ave., Detroit, Mich.
90 King St. W., Toronto, Ontario
New York Show Rooms—5th Ave. at 15th St.

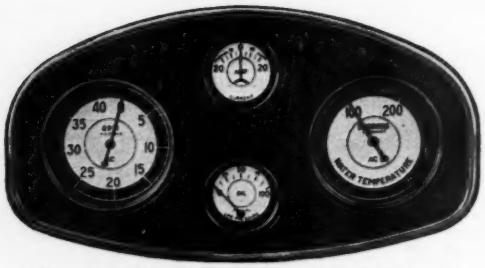
"A Kermath Always Runs"

The 34' launch "ANTARES," owned by Senor F. Ricardo Werner of Buenos Aires. Powered with 150 H.P. Kermath, giving speed of 18 miles per hour.

Above—The 34' launch "MERCEDES" of Buenos Aires, powered with a 20 H.P. 4-cylinder Kermath, with a speed of 10½ miles per hour.

A small seagoing 24' launch, powered with Kermath 20 H.P. engine, giving a speed of approximately 12 miles per hour. Owned by Senor Juan Scheuss.

At right—The boat in the foreground is the auxiliary schooner "SIRENA" powered with a 65 H.P. Kermath. Owned by Senor Carlos Unzue of Buenos Aires.



Available in three, four and five-unit sizes in either a pattern brass design, richly lacquered black or a marine etched and silvered design. All instruments under glass and illuminated by indirect lighting

The AC Ammeter, flanged for individual mounting, registers 0 to 20 amperes charge and discharge

The AC Thermo-Gauge, flanged for individual mounting, has a range of from 32° to 212° F. and comes with 12′ or 20′ of capillary tubing

The AC Oil Pressure Gauge, flanged for individual mounting, is available in three ranges: 0 to 50, 0 to 100, and 0 to 120 pounds

The AC Tachometer, with brackets for individual mounting, is furnished in either clockwise or counter-clockwise movement and in four R. P. M. ranges, namely: 0 to 2500, 0 to 4000, 0 to 6000, and 0 to 8000.

NEW and better Instruments at new low prices

These fine panel instruments tell you just what you want to know in controlling your power plant.

If you prefer separate instruments for dash mounting, these too are available as shown by illustrations above. They are beautifully finished, accurate and reliable — all of AC quality.

Write today for complete descriptive folder and prices. In so doing, tell us what your requirements are and give us the name of your nearest dealer.

AC-SPHINX Birmingham ENGLAND

AC Spark Plug Company
Flint, Michigan

AC-TITAN Clichy (Seine) FRANCE

© 1930, AC Spark Plug Co.

AC INSTRUMENT PANELS AC OIL PRESSURE GAUGES
AC TACHOMETERS AC THERMO GAUGES AC AMMETERS
AC AIR PRESSURE GAUGES AC OIL FILTERS

ALMOST READY FOR LAUNCHING

(*Continued from page* 120)

In repainting wood which has been cleaned down thoroughly, it must be remembered that several coats of thin paint are very much better than one coat of thick paint. Always apply several coats of paint well thinned with turpentine so that they are thin and barely seem to cover the wood. Successive coats will build up the surface again and the final coat can be applied as it comes from the can without further thinning.

While enamels are not so extensively used for exteriors, they have many advantages for interior work. Among these can be mentioned the smooth and glas-like surface which results, which can be easily wiped down and kept clean during the course of the boating season. The exterior of the hull, on the other hand, is usually painted with the prepared forms of yacht paint which are so designed as to yield readily to the scrub brush. The action of these involves a chalking off of the surface, exposing a new one, in this way keeping a hull clean and bright.

During the process of cleaning down the hull there were undoubtedly a number of bruises and poor spots exposed which of course should be remedied before the new coats of paint are applied. There is now available a preparation called plastic wood which is particularly useful in filling up small bruises in woodwork. It is applied in a similar manner to putty and has the property of hardening into a wood-like substance which can be smoothed down in the same manner as the remainder of the work. It can also be used on work which is to be varnished since it is made in colors to match oak and mahogany work so that it can hardly be noticed in bright work after it has been applied.

The frequent neglect of those portions of a boat's hull which are finished bright, or, in other words, varnished, makes it necessary at times to refinish such parts in order to produce a first-class job. Where it is necessary to go into this work to this extent, perhaps the simplest and most satisfactory way will be to clean down all of the exposed woodwork with some of the prepared varnish removers and then finish the operation with a steel scraper, which removes a very thin shaving from the wood, exposing a brand new surface. In such a case, it is necessary to start at the bottom and build up an entirely new finish, which will require considerable effort and care. First a coat of wood filler and stain should be applied to produce a uniform color throughout the work. There are prepared products available from all dealers which will do this work very nicely. Large quantities of fine sandpaper should be provided in order to rub down the surfaces between the successive treatments, to remove all dust specks and insure a smooth, even coat of varnish when the work is finished. There is a fundamental difference in the methods of applying paint and varnish. In specifying paint it is usually required that the color be well brushed out in order to provide a smooth, even result. Varnish work, on the other hand, is not brushed out to the same extent. The varnish is flowed on so that there is a substantial layer of fluid on the work, which is absorbed to some extent by the wood, and also flows out to a very smooth and glass-like surface.

The rubbing down process mentioned above applies to both paint and varnish work. While paints do not require as thorough a smoothing down as varnish work, it is still essential that the work be well smoothed down between each succeeding coat. This applies also to varnished work, with the possible exception that the rubbing-down process must be even more thorough in this case.

While the greater part of the modern boats employ mahogany for their bright work, there are still some boats which are finished in oak. Oak is a difficult wood to treat when installed in a boat. It has the property of turning very black if the bare wood should become wet or damp before it is covered with varnish. Oak can be finished in several tones ranging from a very light to a darker tint. The light color is secured by using a bleaching compound which whitens the wood, and when this is varnished without the use of a stain it turns out into a very attractive light color. Stains can also be used on oak which produce a more familiar golden brown, the tone generally associated with oak finishes. This wood has rather a coarse fiber and must be well filled with wood filler. It is then smoothed down by sandpaper, and the several coats of varnish applied in reasonable succession so that the weather cannot injure the work before it is completed. First-class work may require as many as six or seven coats of light varnishes, although it is quite usual to get along with three or four coats. In maintaining bright work, it is well to remember that the varnish should be renewed from time to time during the season and in the usual boating season of about six months' time the bright work should receive two goings over with fresh varnish at intervals of about seven to

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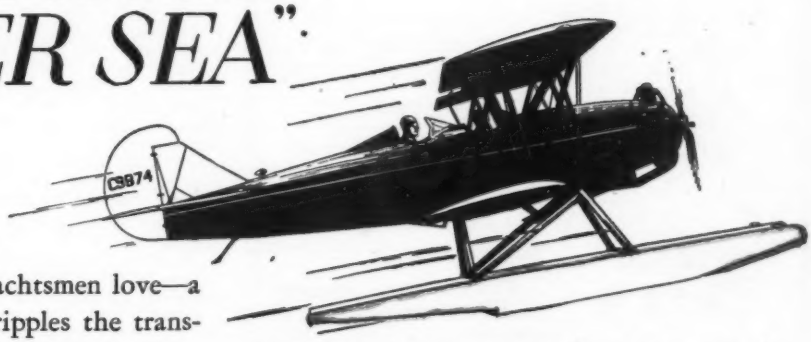
YACHTSMEN NOW CRUISE the "UPPER SEA"



THE sort of day that yachtsmen love—a fresh morning breeze ripples the translucent green of the yacht club anchorage, where cruisers and house boats swing at their moorings. Sails slant away seaward where sunlight silvers the whitecaps.

Into this glorious setting of blue sky and water comes another craft—young, as reckoned in decades, yet familiar and welcome to men who handle ships—the Travel Air seaplane. A wisp of silver in the sky resolves itself with swift approach into a handsome biplane with blue fuselage and wings and floats of silver. It circles the anchorage once, glides down to the water's surface as gracefully as a gull, and eases over to the mooring buoy of a smart cruiser.

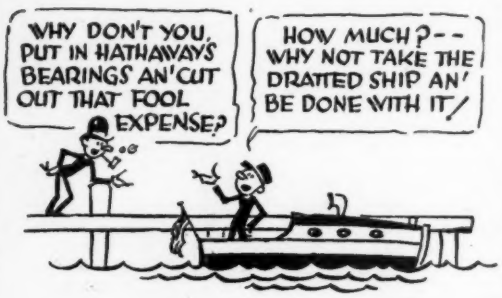
An increasing number of members, who live a hundred or more miles away, along the coast or up the river, now own planes equipped with pontoons. They came to realize that seaplanes are kin to water craft, and worthy of a yachtsman's enthusiasm.

Those who own a Travel Air admire its sturdy construction and excellent behavior in all circumstances of weather. They like the power surplus of its Wright Whirlwind engine—its 15 second take-off with full load—its high speed of 115 miles per hour. And, for trips to localities without water landing places, the staunch floats can be easilv interchanged with wheel landing gear.

It is easy to learn to fly a Travel Air. Its first cost and maintenance are surprisingly low. Complete details will be gladly furnished to yachtsmen who are seeking a "ticket" as master of "upper seas." Write Dept. T-53

TRAVEL AIR COMPANY
Division of CURTISS-WRIGHT
27 West 57th Street, New York

A PLANE FOR EVERY PURPOSE — TRAVEL AIR


WHY DON'T YOU, PUT IN HATHAWAYS BEARINGS AN' CUT OUT THAT FOOL EXPENSE?
HOW MUCH?-- WHY NOT TAKE THE DRATTED SHIP AN' BE DONE WITH IT/

The Skipper Says:

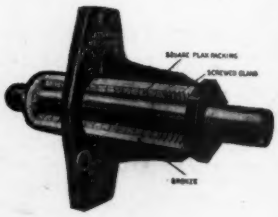
It's a good thing there are some owners who do not use Hathaway Bearings, or the repair men would starve to death. They are mighty saving on the owner's pocketbook as well as his temper and time.

Fifteen years of severest tests have proved to experienced boat owners and builders that

THE HATHAWAY FLAX PACKED RESILIENT STERN BEARING

is beyond all question the most efficient and economical bearing made. No contact between shaft and housing—no metal to metal wear—no cramping—no vibration. Repacked in one to three hours without removing bearing from boat. Actual tests have shown as high as five years use without repacking, or appreciable wear.

Write for descriptive literature and prices. If your dealer does not handle Hathaway Bearings, we will ship to you direct.



The Hathaway

MACHINERY COMPANY

NEW BEDFORD, MASS.

ALMOST READY FOR LAUNCHING

(*Continued from page 122*)

eight weeks. Varnished decks are treated in the same manner, but on account of the wear which takes place may require still more frequent refinishing.

Such portions of the boat as the cabin tops and similar places can be washed down and given a light coat of the proper color. It is well to remember that paints which are applied to canvas work should not be as heavy as might otherwise be necessary. Building up too thick a layer of paint on canvas work is to be avoided. An excellent finish for work of this kind is the application of a good coat of varnish over the paint after it has been applied. The varnish has the advantage of wearing down uniformly with the wear of the weather and feet. It can be renewed during the season, and since it is a smoother finish, it will be easier to clean in service.

The bottom of the boat calls for special treatment of another kind. Paints are applied to boat bottoms for several purposes. The first is to protect the wood against moisture, while the second is to provide a protective sheathing which will prevent the attachment of vegetable or animal growths to the hull. There are many species of worms and small animal life which attach themselves to a boat's hull and if they are able to penetrate into the wood can do immeasurable damage. Many forms of protective paints have been devised to overcome the presence of these growths. Many are very excellent and really do preventive work. Some brands, while worthless in some localities, are excellent in others, so that it is advisable to gossip around among your fellow club members and discover which brands of paints have proven most satisfactory for that particular locality. Some forms of bottom paints afford greater protection when the boat is launched with the paint still wet, while others work better if the paint is allowed to dry. For best results, it is advisable to consult the instructions on the container, as the paint manufacturers recommend the best practice governing their particular product.

Some manufacturers of lacquers have been conducting successful experiments in connection with the use of resinoid finishes. It is claimed for these products that they are more flexible and will dry thoroughly in the air. While little is known as yet as to how these new products will stand up compared to the earlier forms of varnishes, it is interesting to note that the chemical engineer is turning his attention to producing more permanent and durable finishes which will no doubt in a few years' time be quite generally used in boat work.

The Dee Wite Custom Yacht Dispatch Boat, offered for yacht tender and general sedan use

OWN A CRUISER AT $1.16 PER DAY

An average, small, standardized cruiser may be operated throughout the summer for approximately $1.16 per day, according to figures assembled by Henry R. Sutphen, president of the National Association of Engine & Boat Manufacturers and vice-president of The Elco Works.

Taking as a basis a boat costing approximately $4,000 and computing the costs of insurance, painting, repairs, storage, gas, oil and yacht club dues, Mr. Sutphen points out that the entire expenditures should not exceed $425 for a summer of cruising.

In addition, he adds that there is no occasion to eat at roadside restaurants; there are no hotel bills and there is no jeopardy of traffic fines sustained by the touring motorist.

In stressing low depreciation charges, Mr. Sutphen declares that the average boat of the type used in making these computations should have a life of at least 20 years, equal to 5 per cent per year. There is a drop in value of approximately 25 per cent the first year and 3 per cent each year thereafter, but there are many records of used boats selling for virtually the same as the original purchase price.

Advertising index will be found on 3rd last page

THE STERLING PETREL ENGINE

5¼" BORE 6 CYLINDERS 6" STROKE

Piston displacement 779.3 cubic inches.

A CRUISER AND RUNABOUT ENGINE

with counter-weighted and dynamically-balanced crankshaft

Sterling Aluminum Pistons

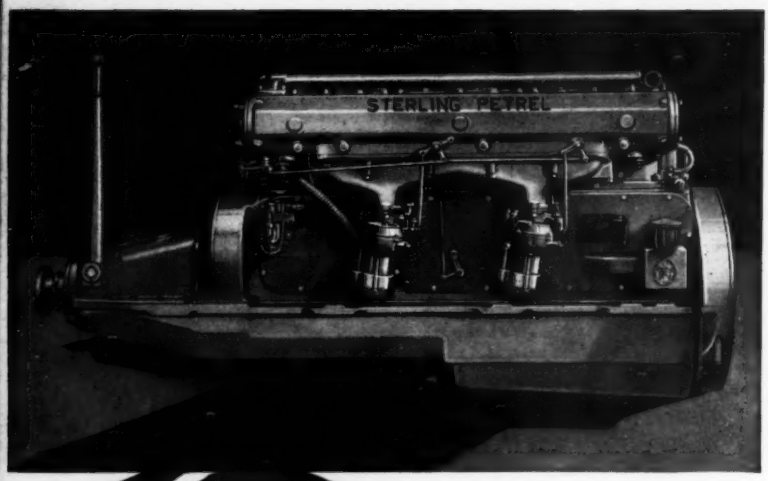
100 H.P., 1000 R.P.M.	150 H.P., 1500 R.P.M.
180 H.P., 1800 R.P.M.	200 H.P., 2000 R.P.M.
Weight 1510 pounds	Price $2500 F.O.B. Buffalo

THE STERLING PETREL

TURNS THE LARGER PROPELLER

AT A SAFE ENGINE SPEED

STERLING ENGINE COMPANY BUFFALO, NEW YORK, U. S. A.



The Petrel - 10% More Engi

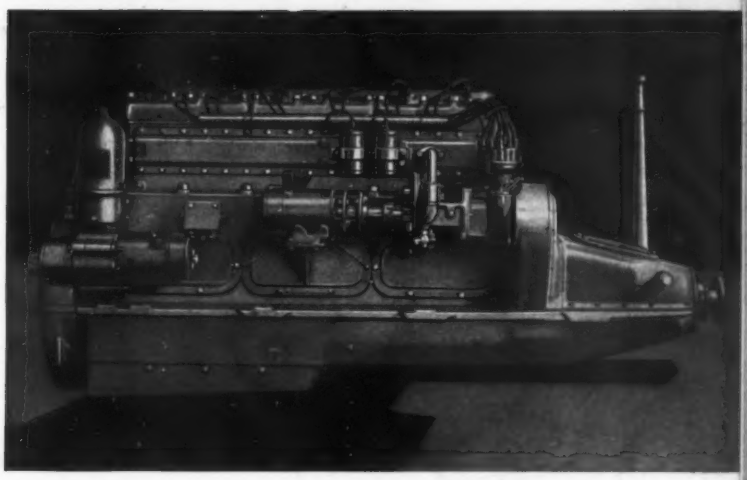
The high-speed Sterling Petrel in 1930 production has required changes over the 1929 model. With 200 H.P. plus, delivered 2000 R.P.M., a conservative engine speed, any comparable eng would need to be turned 10 to 15% faster to equal the powe the Petrel. In those added revolutions the bearing loading centrifugal and inertia forces — multiply terrifically, causing d mental engine strains.

The Petrel has seven longer, large main bearings; the crank is counter-weighted and dynamically balanced (the only se bearing, counter-weighted crankshaft in any 200 H.P. engine) connecting rod is 12½ inches long to reduce side thrust; there no shims in the main or the connecting rod bearings (which re rigidity under load); pistons are aluminum, a patented Ste design (no split skirt); piston pins are full-floating and oiled the pressure system. If any engine is capable of high revolu it is this 200 H.P. Petrel. But Sterling chooses, not high fa revolutions, but safe operation within the bounds of reasone conservative practice.

Herreshoff 46' Cruiser
Twin 200 H.P. Petrels
25 Miles

Sterling

THE ENGINE OF REFINEMENT



he Petrel Is The Better Buy

corded the approval of a great percentage of boat builders
d yachtsmen, the demand for the 1929 model reached the limit
roduction and the momentum is gaining in 1930.

o major classes of buyers select the Petrel:

1. Those technically informed.
2. Those who buy on the basis of known, continued success and the financial standing of Sterling.

h receive the benefit of years of building high-duty engines.
rling built the first Straight Eight. First made 60 miles an hour.
ld all the world's speed records for years. Built aviation engines
en 2½ pounds per horse-power was an achievement. Has al-
ys built fast marine engines. Has a fund of engineering know-
ge and experience unequalled.

hen Sterling builds a high-speed engine it is a sturdy, every-
y engine with major forces compensated and balanced out; an
gine capable of years of good service. And it turns the larger
opeller.

Matthews 46'
Twin 200 H.P. Petrels
27 Miles

THE STERLING PETREL EXCELS

1. The costly seven-bearing counter-weighted crankshaft, each crank throw balanced in its own plane. The only true dynamic balance.
2. Most completely oiled with oil under pressure to main bearings, connecting-rod bearings, piston pins, camshaft bearings and timing gears, and clutch and reverse gear.
3. An oil cooling system that stabilizes engine heat, maintaining even temperature and correct running clearance of all active parts in sustained high speed.
4. An oil filtering system that can be drained automatically in two and one-half minutes, back flushing and clearing the piping and filter.

5. A starter with reduction gearing, assuring faster engine turn-over and facilitating starting. Safe-guarded against a kick-back from advanced spark.
6. Highest grade twin ignition with heavy-duty coils.
7. An L-head engine, easiest to service. Heads can be removed for cleaning and valve reseating without disconnecting inlet or exhaust manifolds, thus saving time in maintenance. Quieter under full load.
8. Special long valve springs of Swedish steel working in moderate range, not overstressed.
9. A clutch and reverse gear capable of maintaining backing effort twice the period of any similar size ever tested at the Sterling plant and with 1 to 1 ratio (engine speed in reverse).

The Petrel is the better buy

The Petrel turns the larger propeller at a safe engine speed

PRICE $2500 F. O. B. BUFFALO

Built also as a lower priced model, for heavy and medium speed cruisers, using iron crankcases, iron pistons and omitting counterweights, where a saving in price is desirable, at $2200 F. O. B. Buffalo.

Sterling

THE ENGINE OF REFINEMENT

STERLING ENGINE COMPANY BUFFALO, NEW YORK, U.S.A.

Super-charged "Eights" and "Fours"

THE POWER OF NIAGARA
Niagara
MARINE ENGINES

The New 1930 Niagaras consist of Standard Equipped or Super-charged Genuine Marine Engines

165-200 H. P.	Only 929-942 lbs.	8 cyl.	Total Overall Length 68½"
125-155 H. P.	Only 869-882 lbs.	8 cyl.	Total Overall Length 68½"
60- 70 H. P.	Only 358 lbs.	4 cyl.	Total Overall Length 37⅝"
40- 45 H. P.	Only 311 lbs.	4 cyl.	Total Overall Length 37⅝"
12- 16 H. P.	Only 325 lbs.	4 cyl.	Total Overall Length 37¼"

IF YOU WANT MORE SPEED WITH LESS WEIGHT

together with Niagara's 27 years of recognized reliability, get the details of these engines. There is an interesting story of these super-charged engines with "booster" running at only crankshaft speed and built into the engine with a sturdiness of construction and engineering perfection that guarantees the life of the super-charger to be equal to that of the motors themselves.

ENGINES THAT WEIGH 50-300 LBS. LIGHTER but withal capable of withstanding the severest service. With their unusually large crankshafts and exceptionally liberal bearings they have no peer for endurance and dependability. You can save too from $50 - $300 with a knowledge that eventually a Niagara will save you many times their cost in years of faithful operation. Equipped with or without reduction gear.

THE NIAGARA

4 Cyl.

Model HSS

60-70 H.P.

Fully equipped

$495.00

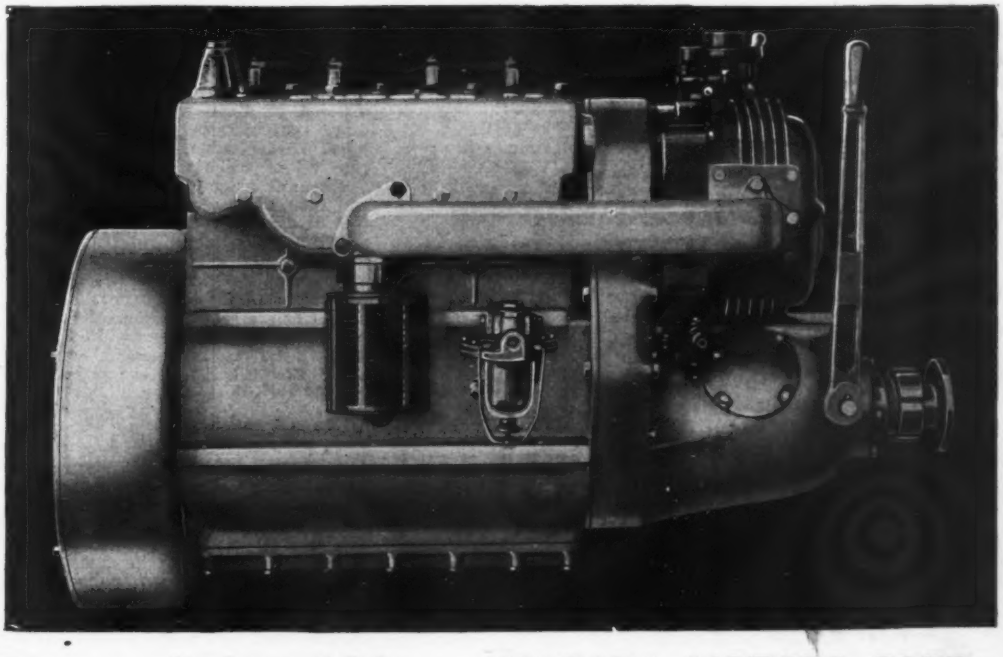
(311 lbs.)

Standard Model

$675.00

(358 lbs.)

With built in Super-charger



AUTHORIZED DEALERS and BOAT BUILDERS
Some Valuable territory still available

Boat Owners and Dealers
Write for Catalogues
(State H. P. Interested)

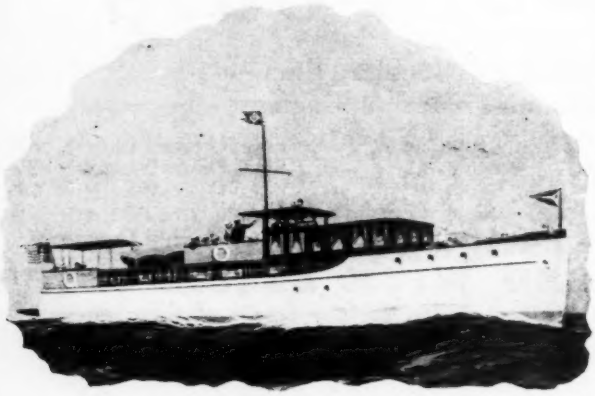
NIAGARA MOTORS CORP.
206-10 Niagara Blvd.
DUNKIRK, N. Y.

Pacific Coast Representatives—Machinery Exporters, Ltd., 465 California Street, San Francisco, California
Chicago Representatives—Motor Boat & Engine Service, Inc., Motor Boat Mart, Navy Pier, Chicago, Illinois
Boston Representatives—Rapp - Huskins Company, Inc., 138-148 Beverly Street, Boston, Massachusetts

The

SUNBEAM

CRUISER

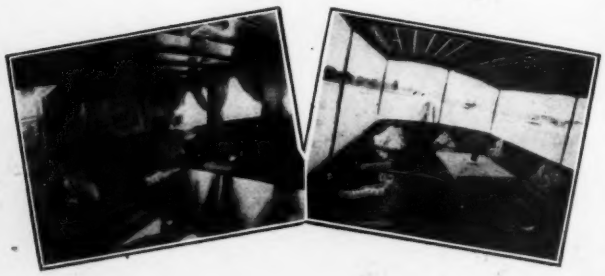


A 62 FT. YACHT

A quality craft accommodating a party of six or eight — capable of the most extensive day and night cruising — offering the nearest approach to home comfort and convenience ever achieved within the compass of sixty-two feet.

Sound, practical experience has made it possible to provide three comfortable staterooms, a large deck dining saloon, a sheltered navigating bridge, spacious after deck and a pleasant sun deck without detracting in the least from the graceful lines and attractive appearance. Available with either Diesel or gasoline power.

Write or wire Dept. M for Blueprints and Specifications



A Typical Interior View *Spacious After Deck*

Henry C. Grebe & Co., Inc.
400 North Michigan Ave. CHICAGO

THE GALLEY AND ITS USE

(*Continued from page* 35)

a business in itself, and many shipyards are not capable of doing such work as it should be done. Some stock boats are equipped with standard domestic ice boxes built into the galley and finished to match the interior cabinet work. They are much more satisfactory than the usual locally built-in type. It is essential that heavy rust-proof hardware be installed on all refrigerator doors, that the locks be self-acting, and of course the food compartments must be of porcelain or white enameled metal. Before leaving this subject, a word of caution about ice. Get artificial ice if you can, but in any case see that it is clean before it comes aboard, scrub out the entire box with soda and fresh water now and then, and don't forget the drain.

FOOD STORAGE

Food supplies may be divided into two classes: those required daily and the reserve supply. The varieties used constantly must be in an accessible and convenient place, while the reserve may be stored in the lower lockers. Canned goods, on account of their weight and bulk, should be carried as low down as possible, with a few cans in an easily accessible place. Several cans of fruit should be kept in the refrigerator so they will be cold and ready to serve when wanted.

Groceries must be placed in a dry and well-ventilated locker in good containers, and in common with canned goods must be well stowed to prevent carrying away and messing things up. Small quantities should be kept in Mason jars or press-top cans for current use. The jars are more sanitary, and if a section of automobile inner tube is slipped over each jar, they will neither break or rattle.

Condiments, such as sugar, salt, and spices, may well be placed in smaller jars on a shelf near the stove. Shakers will not work on account of dampness. Bread should be kept in a regular metal box or in a tight metal-lined and covered drawer. Crackers must be purchased in metal boxes and left in their containers, tightly closed, or they will not remain fresh. Needless to say, all food containers must be regularly scrubbed and aired in the sun. Failure to do this will result in mouldy supplies and spoiled food. Vegetables are difficult to keep, but large supplies are not needed at any one time unless extended offshore cruises are taken, when the desiccated or canned varieties will have to do. Potatoes will keep well in a dry bin, if care is used in selecting only dry ones that show no signs of sprouting. After they have been aboard, they should be gone over occasionally, and any showing sprouts must be used at once or thrown out.

UTENSILS AND THEIR STORAGE

Pans should be placed in a locker by themselves near the stove and work-table. It is a mistake to hang them up on a bulkhead, as they will be noisy, will mark the surface on which they hang, and will not stay clean. Heavy aluminum is the best material for these articles, for the cheap lightweight sort will prove unsatisfactory. In general, they should be shallow and broad so they will not capsize. A set of three deep triangular pans, all of which will go on one burner, should be provided, as they will increase the capacity of the stove enormously. They will require some watching when it is rough. The frying pan should be of cast aluminum.

A convenient drawer will hold knives, spoons and other small articles. Cutlery should be of stainless steel, and don't forget a small oil stone or other sharpener for the knives. A good can opener of the kind that removes the entire top of the can should be included. Obtain only the best equipment, for it will see hard service, and there will not be a store ready with replacements just around the corner. Weed out the unnecessary articles, and don't overload with useless gadgets.

Tableware, linen and similar articles may best be stowed in drawers, and remember a generous supply of paper napkins. Paper plates may be provided also, if you like them. I think they are an abomination, but if you don't mind eating part of the plate with your food, by all means have them.

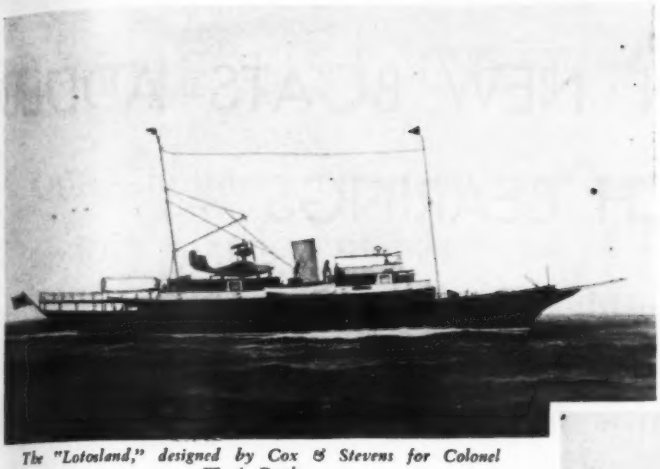
Racks will care for the dishes and glassware. It is an advantage to have them enclosed with plain or glass doors to prevent the accumulation of dust and to avoid the labor which it entails. Dishes are heavy, and such lockers must be well and strongly constructed. Their best location is near the sink, so that china may be stowed as dried, without extra handling or breakage.

THE STOVE

Only a few years ago the average marine stove was a most unsatisfactory and often dangerous article of equipment. Such is no longer the case. Entirely satisfactory stoves of many different models are now available, so there is no excuse for the installation of unsuitable equipment. This most important adjunct of the galley must be a real seagoing stove, of rust-proof material, with adequate provision for fastening down and a rail or other device to prevent pans from shifting about, and it must be well designed and built.

(*Continued on page* 130)

On these new boats and many others . . .

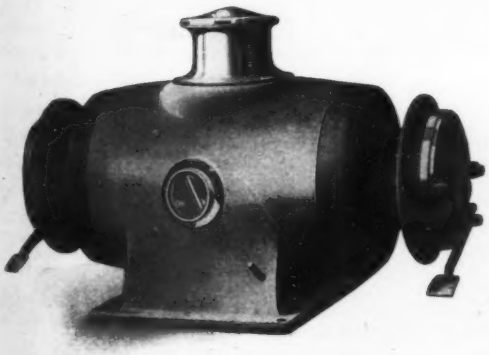


The "Lotoland," designed by Cox & Stevens for Colonel W. A. Deeds

"Sirene," designed by Thomas D. Bowes for Mr. John Jacobs

"Wayfarer," designed by Henry J. Gielow, Inc., for Mr. Winthrop W. Aldrich

A-E-CO Deck Auxiliaries



ELECTRIC WINDLASS, TYPE G

A fully enclosed, self-contained machine. No holes in the deck required to accommodate shafts. Operates by electric switch, conveniently placed on front of machine.

Smart boats deserve smart fittings. Their owners appreciate deck auxiliaries that make yachting a real pleasure.

A-E-CO Auxiliaries are as smart as they are reliable. They combine beauty of line with beauty of finish, and are worthy of a place on the finest yacht. Powerful, compact machines, they banish hard work and promote safety.

The A-E-CO line includes electric and hand windlasses, electric and electro-hydraulic steerers, hoists for handling boats and sails, davit winches, steering wheels, chain stoppers and anchors. You will find these machines on the outstanding boats of the year.

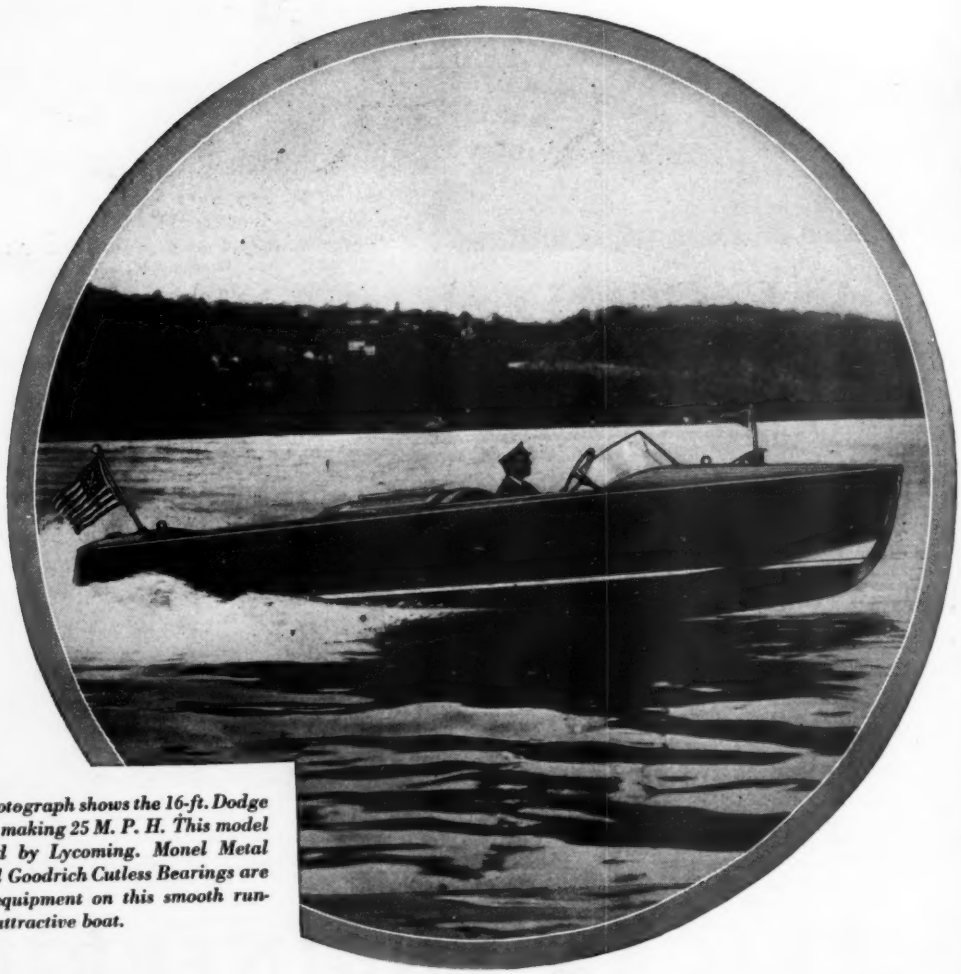
Write for new Catalogue

AMERICAN ENGINEERING

AMERICAN ENGINEERING COMPANY, 2418 ARAMINGO AVENUE, PHILADELPHIA

THOUSANDS OF NEW BOATS ADDED WITH GOODRICH BEARINGS . . . .

Bearing troubles will diminish in 1930—smallest Dodge boats, as well as largest, now originally equipped with this *Soft Rubber Bearing*, *lubricated* with *water*

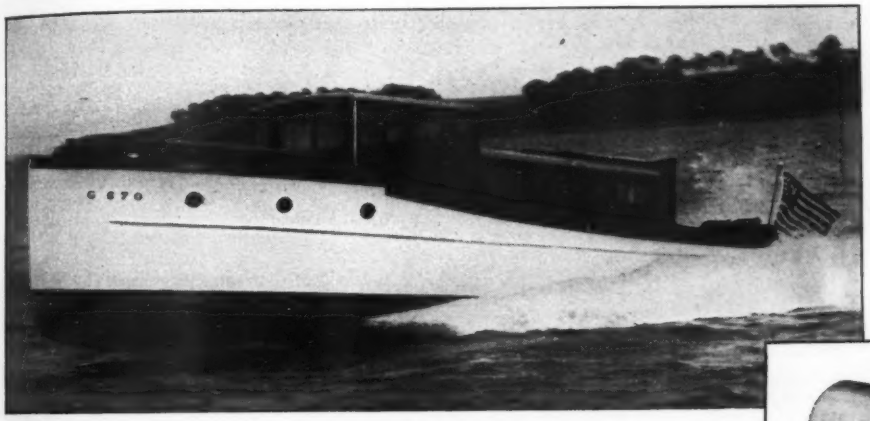


THIS photograph shows the 16-ft. Dodge Runabout, making 25 M. P. H. This model is powered by Lycoming. Monel Metal Shafts and Goodrich Cutless Bearings are standard equipment on this smooth running and attractive boat.

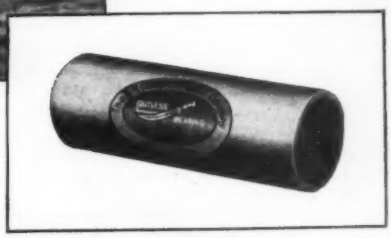
Advertising index will be found on 3rd last page

TO THE LIST OF THOSE EQUIPPED

Other builders increase their use of Goodrich Bearings —with strong endorsement of this new and valuable principle in marine engineering



LLENROC II, express cruiser, built by Toppan Boat and Engine Company. Winner in all express cruiser races entered in the last three seasons. Powered with 200-h. p. Sterling Petrel Motor, speed 32 miles per hour. Equipped with Monel Metal Shafts and Goodrich bearings.



THIS year — thousands of buyers of small boats will get Goodrich bearings *at no extra cost.* Trouble and expense of bearing removal will be reduced to an absolute minimum for them.

Every Dodge boat, down to the smallest model (16 foot — shown in photo on the opposite page) will have these bearings as original equipment.

In the past, the larger, finer boats of Dodge and dozens of other large builders have had Goodrich bearings. Now Dodge sets a precedent by offering them, also, on their most inexpensive model.

This step shows the spirit of this builder in striving for perfection — down to the smallest detail.

Dart, also, adopts these bearings for smallest model

Another builder to take the same step is Dart Boats, Inc. They now use Goodrich bearings as standard equipment on all boats, including their smallest model.

The value of these unique bearings is well expressed by the Toppan Boat and Engine Company, Medford, Mass., one of the leaders of the industry. H. M. Lewis, vice-president, writes, "The Goodrich Cutless rubber bearing, in our opinion, must definitely and entirely displace the babbitt-lined and flax-packed bearings formerly used in the industry.

"The famous and remarkable Toppan Champion Llenroc Express Cruisers, winners of all the Express Cruiser Events entered in the past three seasons, owe their success in large part to these bearings.

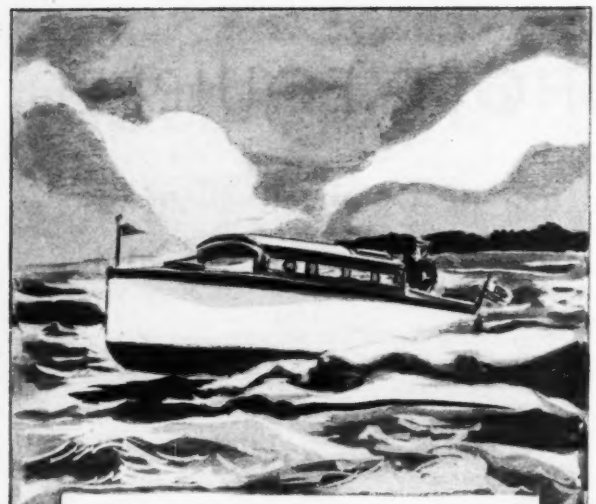
"Three years ago we had substituted flax-packed bearings of our own design for the usual babbitt type bearing. This increased the life of our strut bearings and shafts to some extent, but still required hauling out just previous to any important Express Cruiser Event to examine or repack the bearing. The average life of former bearings under the forces of shaft buckling and high engine revolutions in these remarkably fast cruisers was about 200 miles.

"All this 'Bearing Fear' is now removed. We do not examine our struts before regattas, as we know from experience that Goodrich Rubber will see us through successfully. We have determined from our records that all Llenroc Express Cruisers, so equipped, have as yet never worn out a Goodrich Rubber Bearing, and last season marks the third year's use."

The B. F. Goodrich Rubber Company, Est. 1870, Akron, Ohio.

CUTLESS BEARINGS

Another B. F. Goodrich Product



And Now—
Within the Means Of Every Lover of The Sea!

Adventure! Glorious trips down the winding rivers, across blue, sparkling bays and sounds. Nights filled with the romance of the sea and you—master of your ship.

A true ship of the sea is this stalwart cruiser of twenty-six feet, which now brings true these dreams you've had of the sea. Compact yet roomy and comfortable. Built of the finest materials by men whose life has been boats and sea. Up to the minute, completely equipped for every comfort, there are berths, galley, toilet and lots of real privacy.

A cabin cruiser, mahogany over white oak framing with bronze fastenings throughout—at a price that is as amazing as the boat itself. Direct from the builder to you—that's why we can offer this high quality boat at the following price.

The
OWENS 26
Cabin Cruiser
Priced at only **$1860**

OWENS BOATS

ANNAPOLIS MARYLAND

THE GALLEY AND ITS USE

(*Continued from page* 126)

The galley stove should have at least three burners, or lids, in the case of a coal burner, and must be provided with an oven, either built in or of the portable variety. This is of the utmost importance. You simply cannot have good, healthful food without one. Many owners of small cruisers get along with a two-burner stove, no oven, and live on canned and fried food. This is very poor policy, both from the standpoint of pleasure and from the standpoint of health.

The installation of this piece of equipment requires some care, both to secure satisfactory use and to guard against fire. The stove compartment must be well insulated with asbestos firmly fastened in place and then covered with sheet metal. Polished zinc or Monel metal are good. Copper will do, but it is too hard to keep clean and soon looks badly. Location is important. Food and pan lockers must be near by, and the refrigerator far enough away so that it will not be affected by the heat.

The coal or wood burner as the oldest type has first claim on our attention. A stack with Liverpool head is necessary, and provision for fuel stowage is sometimes difficult. The heat from this type of stove is most welcome at times. It is generally advisable to carry a small folding alcohol or gasoline stove for hot weather use. Charcoal briquets are the ideal fuel, as they give a quick hot fire and need no kindling for starting. If the fire is to be kept going for some hours, there is nothing like chestnut anthracite coal for satisfactory service, and a little of it will last a long time.

The kerosene stove has few friends. There may be good ones, but I have seen few. The ordinary variety is three-quarters smoke and one-quarter heat, to say nothing of blackening pans and giving off soot and smoke. Kerosene itself is objectionable on board, on account of the odor and the fact that it will not evaporate readily if spilled.

Alcohol is fairly satisfactory as a fuel, but it is expensive, will ruin the finish of anything on which it is spilled, and it is not easy to get everywhere. Further, additional tanks or cans are needed, and these are apt to be annoying.

Some of the newer gasoline stoves are most satisfactory. Many people are prejudiced against this variety on account of fire risk. With the present low volatile gasoline and a properly built and installed stove, this risk is negligible. No one but a fool will fill a burning stove, and that is the greatest danger. Fuel is always at hand for the gasoline stove as long as the main tanks are not empty, and it is always procurable. The newer types generate gas in a few moments after priming and give a hot, odorless and clean flame. They are the cheapest to operate of any and are very compact. The best models have the tank and pump removed several feet from the stove and connected to it by means of small-bore, heavy-walled tubing of copper.

A gas has finally been developed for marine use, and is a highly satisfactory type of fuel. Some storage space is required for the tanks, but this can generally be arranged. They should be in a separate well ventilated compartment if possible, although the makers claim this gas to be harmless. A whole season's supply can be stowed away at one time, and replacements are easily obtained. For ease of operation the gas stove is ideal.

Near the galley compartment must be placed a fire extinguisher capable of extinguishing a fire caused by the fuel used by the stove. Do not place it where flames may prevent access, keep it in order, know how to use it, and you will probably never need it; throw it in some out-of-the-way place, and you will need it the first time you are out.

WORK-TABLE AND SINK

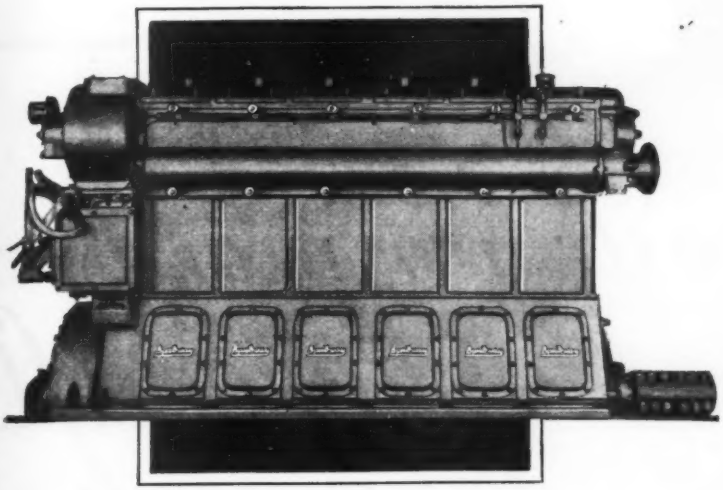
The work-table should be built in near the stove and refrigerator, with a wood top and locker or drawers underneath. The top should be oiled and must be kept well scrubbed, as it will be used in lieu of a bread board. The height must be right to suit the cook, or a tired back will result, and the moulding around the edge, to prevent things from sliding off, must have slots at the corners to facilitate cleaning. A good location for this table is between the stove and the refrigerator. In any case, it should not be necessary to reach across the stove for any purpose. A folding seat or a common stool will be a great convenience at this location, if there is room available.

The sink may well be located on the opposite side of the galley from the other fittings, as it is but little used in the preparation of meals. It must be of generous size and fitted with a stopper so that dishes and pans may be washed without using a dishpan, which is a hard thing to stow. Some of the toy-size sinks seen on cruisers are of no use whatever except as a connection to the waste pipe. Fresh water should be supplied by a pump of generous size. Gravity flow of the water is conducive to waste. The waste pipe should be lead of adequate size, fitted with couplings so that it may be taken apart for cleaning. Just

(*Continued on page* 134)

Advertising index will be found on 3rd last page

POWER
ECONOMY
DURABILITY.

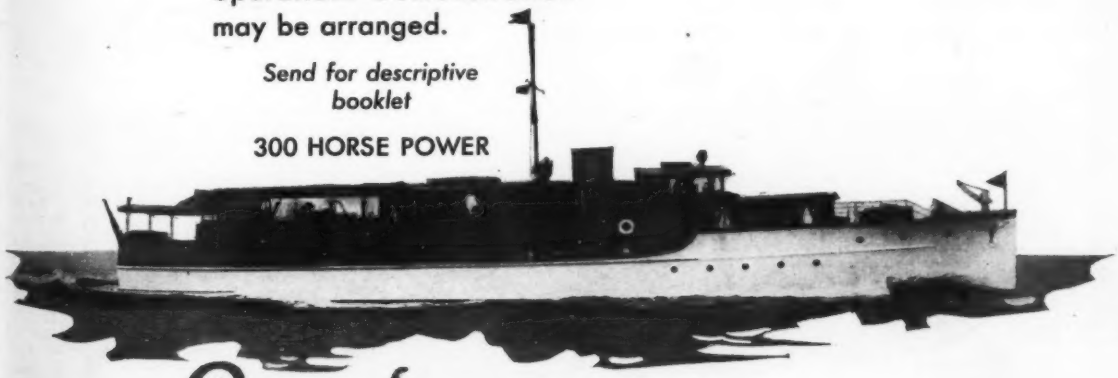


100% Performance—an airless injection engine that responds instantly to the throttle, with no hesitation, no sooty smoke, no vibration.

Before you select an engine . . . whether for a new yacht or for replacement . . . see the Speedway Diesel in operation. Demonstration may be arranged.

Send for descriptive booklet

300 HORSE POWER



Speedway DIESEL ENGINE

CONSOLIDATED SHIPBUILDING CORPORATION MORRIS HEIGHTS, NEW YORK

SEAWORTHY

It costs no more to own a Hackercraft

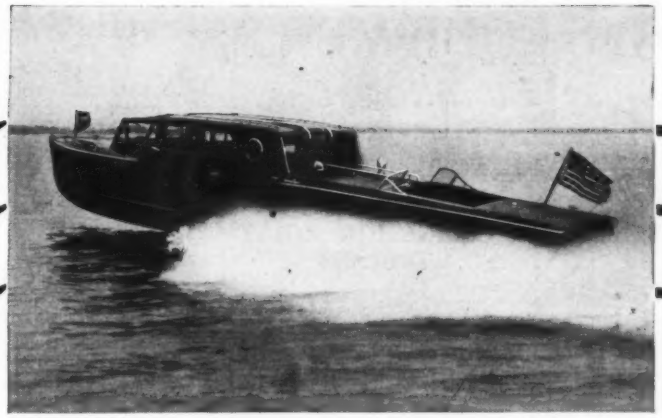
The faultless beauty and grace expressed in the hull contours and elegant appointments of Hackercraft are the concomitants of an inbuilt quality. The unimpeachable standards of Hackercraft design—the finest hand-wrought details provide still further evidence of this strict adhenence to quality fabrication. + + The superb riding action and flashing speeds of Hackercraft are equally capable of winning your esteem and unqualified praise. But the varied elements of Hackercraft that present their forceful message of quality are equally ready to undergo the severest tests of all—durability and enduring performance! + + You will discover carefully woven into the quality details of these handsome boats a sturdiness and permanence that only genuine Honduras double planked mahogany combined with stout white oak keel and framing, painstakingly copper riveted and screw fastened, alone can give. + + Price? A comparison discloses a modest difference of but 3% or 4% . . a differential so slight that even the first year's use of a Hackercraft will vindicate your choice beyond all doubt. + + + + + + + +

ON DISPLAY—New York, 5th Avenue at 15th Street; Boston, 1043 Commonwealth Avenue; Chicago, Motor Boat Mart, Navy Pier; Detroit, 7433 East Jefferson Avenue.

HACKER BOAT COMPANY + +
530 River Drive
Mt. Clemens, Michigan

The 11 passenger 30 footer is a 40-42 mile Kermath powered boat. $5500 f. o. b. factory.

Advertising index will be found on 3rd last page



A fully equipped 38 foot twin screw 42 mile an hour cruiser-commuter. $17000 f. o. b. factory.

-then WHY NOT HAVE THE BEST

Famous as America's fastest speed boat, the 26 footer is priced at $4475 f. o. b. factory.

Mailed on Request to All Who Wish It.

The 24 foot Hackercraft is a nine passenger de luxe 35 mile mahogany boat. $3150 f. o. b. factory.

HACKERCRAFT

Advertising index will be found on 3rd last page

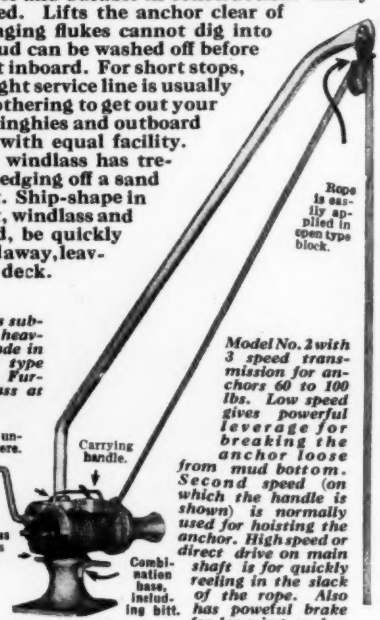
STURGES EQUIPMENT

Makes Boat Handling Easy

The Sturges Anchor Hoist, Dinghy Line Control, and Jiffy Mooring Snap are specially designed to simplify boat handling and increase boating pleasure —they are better than signing on a paid hand.

STURGES COMBINATION ANCHOR HOIST DINGHY DAVIT AND WINDLASS

BREAKING and weighing the anchor, a difficult task at best, especially when buried deep in a hard bottom, become simple operations with the aid of the Sturges Anchor Hoist. Simple and durable in construction. Easily installed and operated. Lifts the anchor clear of the bow, where swinging flukes cannot dig into the planking, and mud can be washed off before the anchor is brought inboard. For short stops, anchoring with the light service line is usually sufficient, without bothering to get out your heavy anchor line. Dinghies and outboard motors are handled with equal facility. Used separately, the windlass has tremendous power for kedging off a sand bar or for hauling out. Ship-shape in appearance, the davit, windlass and crank may, if desired, be quickly unshipped and stowed away, leaving only the base on deck.


Rope is easily applied in open type block.
Davit unships here.
Carrying handle.
Windlass unships here.
Combination base, including bitt.

Patent Applied For

Sturges Anchor Hoist is substantially constructed, heavily galvanized, and made in three sizes for any type anchor up to 100 lbs. Furnished entirely of brass at slight additional cost.

Special hoists for outboard motors with capacities of 200, 300 and 400 lbs.

Model No. 2 with 3 speed transmission for anchors 60 to 100 lbs. Low speed gives powerful leverage for breaking the anchor loose from mud bottom. Second speed (on which the handle is shown) is normally used for hoisting the anchor. High speed or direct drive on main shaft is for quickly reeling in the slack of the rope. Also has powerful brake for lowering anchor into water.

STURGES JIFFY MOORING SNAP

WITH the Sturges Jiffy Mooring Snap, there is no longer any excuse for missing a mooring, falling overboard, or losing a boat hook. The Jiffy Snap is easily fitted to one end of a boat hook by means of a ferrule, and is attached to the bitt with a temporary mooring line. With the line extended along deck to the wheel, moorings are easily made single-handed, simply by hooking the Jiffy Snap on the ring of the mooring buoy and releasing the pole with a jerk. Indispensable aboard sail boats.

Patent Applied For

The Jiffy Snap on the buoy ring, with the pole released.

STURGES DINGHY LINE CONTROL

Cable automatically winds up and takes in slack.

FOULING the dinghy line around the propeller in reversing or manoeuvering is an impossibility with a Sturges Dinghy Line Control. Slack is automatically taken up on a spring-operated drum and kept where it belongs—on deck instead of loose under the stern.

Let us give you full particulars on Sturges Efficient Boating Aids. Write today for illustrated literature

STURGES ANCHOR HOIST

3 Kensington Road Brantville, N. Y.

THE GALLEY AND ITS USE

(*Continued from page* 130)

ahead of the outboard connection a sea cock or gate valve must be installed to prevent leakage if this pipe should be damaged, to allow dismantling while afloat.

A wood drain board, well oiled, and carefully fitted to the sink rim, is necessary. A leak at this point will result in damage to supplies in the locker which should be fitted below. Like everything else of the sort aboard, moulding must be fitted around the drain board to keep the dishes from sliding off. A cover may be fitted to the sink proper so that when not in use as such, extra table space will be available. The location of the sink should allow two people to work, one washing and the other drying dishes at the same time.

FOOD AND ITS PREPARATION

Meals served from the galley should not differ very much from those served at home. Have what you wish cooked the way you prefer it, and you will find that few concessions need be made because you are afloat. It is a great mistake to make a violent change in your diet the moment you go aboard, especially in the case of children. I am firmly convinced that this is one of the principal causes of seasickness.

With a galley arranged as outlined, a diet limited to fried and canned food is absolutely unnecessary and should not be tolerated. Fresh fruit and vegetables can be served frequently and fresh milk often. Eggs and salads are easy to prepare and should be a frequent item on the menu.

It is not my intention to give a long list of foods—some feminine acquaintance can do it much better—but simply to mention a few items which have unusual value afloat.

Boiled ham packed, boneless, in a can, canned corned beef, of first quality, not the monkey meat of army days, and tongue, all make fine emergency meat rations, to be drawn upon when fresh meat is not to be had. Hard salt crackers keep well and are wonderful with a cup of soup made from bouillon cubes when it is too rough to cook a meal. Canned soup served in a cup is very invigorating in bad weather, and it is much better for the watch on deck than too much coffee.

Menus should be prepared in advance and stores stowed in such fashion that those first required will be at hand and not in the bottom of the locker. A want list should be kept by the cook and sent ashore at each port. Toward the end of the cruise the reserve rations should find a place on the menu, as you will probably not care to carry them ashore.

Meals must be served on time, regardless of weather. It may be only a cup of soup and a cracker, or a glass of milk and a sandwich, but when meal time arrives, food is necessary. Unless all hands are seasick, and they will be if without food, meals are more important in stormy weather than at any other time. A real sea cook who can produce good food under adverse conditions is a jewel without price, but any one can drop a cube of Steero in a cup of hot water.

The limited space of the galley makes it necessary to put things away as soon as they are no longer required. When the meal is on the table there should be nothing left scattered about. The dish water should be heating, and, if a member of the amateur crew, the cook ready to eat with the rest.

Cleaning up should be done immediately after the meal is over. It is easier at that time, and nothing looks worse or is more unsanitary than a clutter of dirty china in the galley. Further, unless the dishes are put back into the racks a good roll may put the whole mess on the floor. In order to avoid trouble with the drain pipe, dishes and pans must be scraped before going into the sink. This is easily done with a rubber scraper or a paper napkin. The garbage may be wrapped in paper or put in an empty can and taken ashore if in harbor, or sunk overboard if at sea. Don't throw anything over the side in any harbor or while near the beach. It is hard to believe, but it is done every day, probably out of thoughtlessness more than anything else, but such thoughtlessness is the worst kind of selfishness.

Napoleon said that "an army travels on its stomach." It is a certainty that a sailor floats on his. See that your food aboard lets you keep on floating.

A NOVEL HOUSEBOAT

The American Boat Corporation of New York is planning on the construction of a standardized houseboat hull 44½ feet in length with a beam of 11 feet. A choice of four different hull arrangements is offered, the most attractive of which are a houseboat arrangement with living quarters, state rooms and complete furnishings. The other arrangement provides for what is known as a Tea-boat which might be termed a floating tea-room with all necessary appurtenances. Still another is a bath-boat arranged with numerous dressing rooms, spring board, etc., and the last is a simple landing float provided with a little shelter cabin for use in bad weather.

Advertising index will be found on 3rd last page

"Till noon we quietly sailed on
Yet never a breeze did breathe:
Slowly and smoothly went the ship,
Moved onward from beneath.

Under the keel nine fathoms deep
From the land of mist and snow
The spirit slid; and it was he
That made the ship to go."

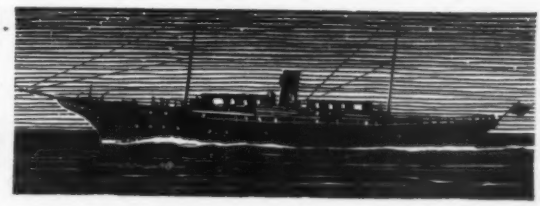
"Ancient Mariner"

The Spirit Materializes

Gliding along with scarcely a tremor in hull or rigging, the Cooper-Bessemer Diesel powered yacht indeed appears to be "moved onward from beneath" by the Spirit of the deep. + So smooth, so quiet and so free from vibration are these modern yacht engines that they lend credence to that fantastic old yarn of the Ancient Mariner. + Modern mariners, realizing that there is no substitute for smooth, silent, unfailing power, select Cooper-Bessemer Diesels to make every yachting moment a pleasure.

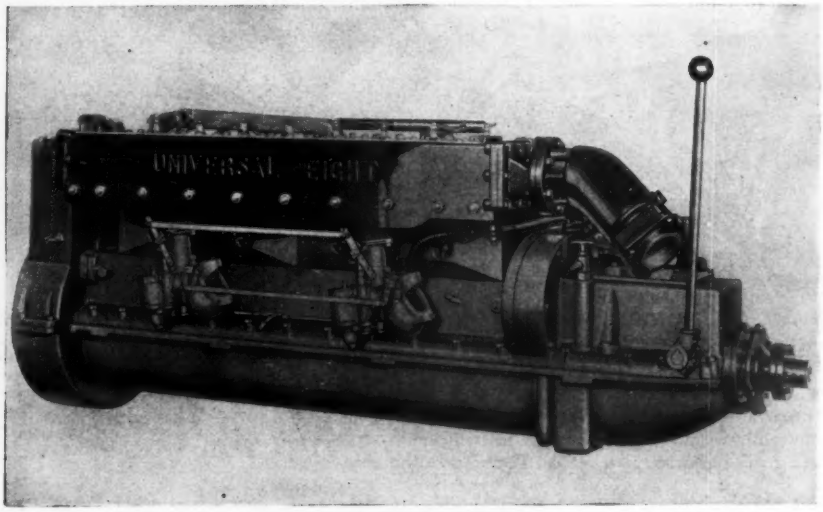
THE COOPER-BESSEMER CORPORATION
General Diesel Sales Offices: 25 West 43rd Street, Suite 301, New York City
Plants: Grove City, Pa., Mt. Vernon, Ohio
Special Yacht Representative: EARL H. CROFT, 25 W. 43rd Street, New York City

COOPER-BESSEMER
DIESEL MARINE ENGINES
POWERING AMERICA'S FINEST YACHTS



100% marine—

—for that added



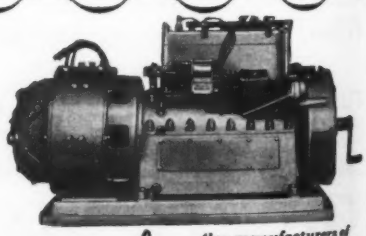
The Universal Eight—115

New, improved Manifold and larger ports have greatly increased the power (ratings conservative) and improved performance. New improved alloy iron castings. New improved foundry process makes for smoother and better castings. New Universal built-in Oil Cooler. New Water Distributing Plate. New improved reverse gear. New Universal Built-in Flame Arrester and Drip Bowl. New, handsome Instrument Panel. New, improved Electrical Equipment. New Permite Piston with cast-in strut. New precision manufacturing with much closer tôlerances than used in regular production practice makes for better and finer 100 per cent Marine Motors.

The conscientious boat builder is never content merely to get by. He builds with the knowledge that upon the excellence of his product depends not only the pleasure but, perhaps, the very lives of his customers. So, more and more, conscientious boat builders are selecting Universal 100% Marine Motors to power their boats. They know, after the closest study, that Universal design and construction are the best possible assurance of dependability and capable performance. They know that such unusual

There's a Universal to meet your needs

The Blue Jacket....	45 HP
The Single Cylinder.	6-8 HP
The Flexifour.....	10-15 HP
The Super Four....	35-50 HP
The Sixes.....	77-88 HP
The Eight.....	115 HP



Universal MOTOR CO.

Also manufacturers of
MARINE ELECTRIC PLANTS
1½—3—4—5—7½—10—15—20 kw.

Advertising index will be found on 3rd last page

100% good . . .

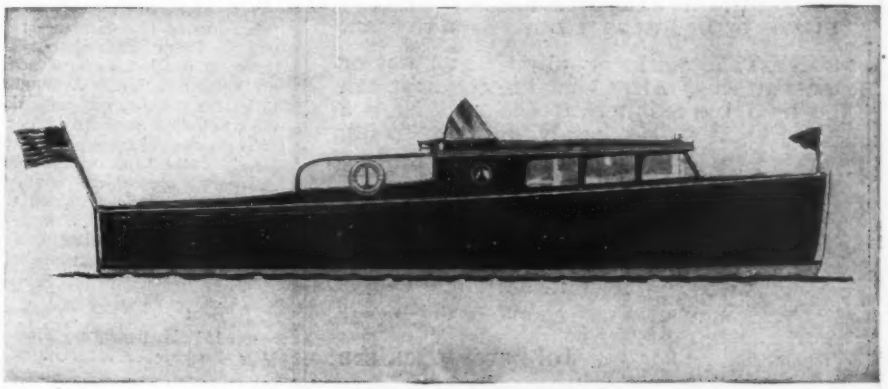
measure of value

features as eight head-studs per cylinder, special provision for perfect cooling and non-distortion of castings, special alloys and controlled casting made in the Universal Foundry, dynamically balanced crankshafts, and special valve construction constitute real insurance against the defects of ordinary motors. And they are willing to pay for these features for the protection of their customers.

When you want that added measure of value, install a Universal.

A few of the quality builders who use Universal power for that added measure of value:

Sea Sled Corporation
Auto-Hydro-Craft
A. B. Chase-Emerson
Dunphy Boat Mfg. Co.
Matthews Company
Atlas Boat Company
Century Boat Company
Dyer Motorcraft Corp.
North Star Marine Const. Co.
Luders Marine Const. Co.
Mathis Yacht Bldg. Co.
Fremont Boat Bldg. Co.
Staples, Johnson & Co.
Wheeler Shipyards
Tregoning Boat Company
Fellows & Stewart
Thousand Island Marine Construction Co.
The Aeolian Company
Rice Brothers
Down East Boat Corp.
Debasco Boat Company
Crandall Boat Company
Peterboro Canoe Company
Dan Kidney & Son
Thompson Bros. Boat Mfg. Co.
Toppan Boat & Engine Co.
Consolidated Shipbuilding Corp.



The New Fremont Pathfinder
A 30′ all mahogany craft combining beauty, speed, luxury, and seaworthiness. Universal Eight—115 is standard equipment

Universal MOTOR CO.

UNIVERSAL MOTOR COMPANY
210 Harrison Street, Oshkosh, Wis.
New York Showroom: 44 Warren St.
London Showroom: 22 George St., Hanover Sq. W.

UNIVERSAL MOTOR CO.,
210 Harrison St., Oshkosh, Wisconsin

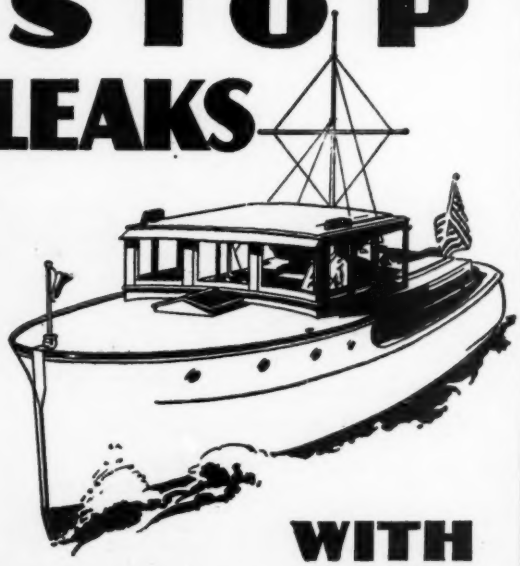
Please send me your 1930 year book containing 40 pages of valuable data on the new Universal Motors and their use.

Name.....

Address.....

City.....State.....

STOP LEAKS



WITH

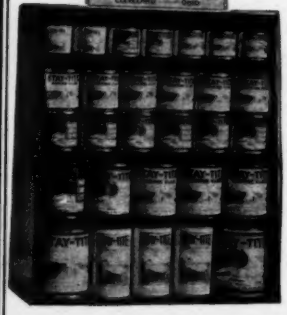
STAY-TITE

MARINE CAULKING CEMENT

Seal all cracks, seams and joints permanently with this waterproof cement. It is easy to use—apply just as it comes from the can.

STAY-TITE works equally well on wet or dry surfaces. After applying the boat can be used immediately if desired. Keep a can handy for emergencies.

Get acquainted with STAY-TITE—the favorite waterproof cement of thousands of boat owners. See your dealer or write for information.



Jobbers—Dealers

STAY-TITE is a profitable item to stock because of its quick sale. We furnish FREE, signs and the display cabinet shown. For prices and complete information about our line of specialties—

MAIL COUPON

THE SIXTH CITY SPECIALTY & MFG. CO.

3109 Detroit Avenue, Cleveland, Ohio.

Send information on STAY-TITE to

NAME_____

ADDRESS_____

CITY_____ **STATE**_____

PALM BEACH STARTS FLORIDA SEASON

(*Continued from page 37*)

both Class C heats. Millikin in his West Palm Beach Baby was second in both heats, and his other boat, piloted by Homer Knight grabbed two thirds.

Bradfield's Miss Buckeye is powered with a Duesenberg motor while Sparrow has a Miller Special engine aboard. Baby Tarpon, owned by Robert Ringling and driven by Halva Ekstam and Miss Westchester II, E. W. Hammond, owner, while not finishing among the first three in the unlimited class, were both driven by Miller motors.

Runabout events rounded out the regatta. Three heats, two at five miles and one at ten, were held for minus 200 h. p. motors. Captain Henry Farnsworth, driving Adriatic for Wooster Lambert, St. Louis, swept home ahead of the field in all three events for a total of 600 points. Farnsworth was driving the same 26-foot Hacker runabout, which won the corresponding event last year. The runabout affair for plus 200 h. p. jobs was carried off by C. Mendelson, Miami Beach, with a Sea Lyon. He grabbed off all three heats.

Final activities on the two-day card was a cruiser race, on a handicap basis. The boats, four of them, were lined up for a ten-mile sprint on the first day, and raced for their handicaps. Saturday they were started off in the opposite order, the No. 1 boat of Friday being away from the line more than three minutes behind the first starter. The three place winners finished almost in a bunch and Maggie, driven by Henry O. Rea, West Palm Beach, first on Friday, away last, cut his first buoy and after making the circle to rectify his error, failed to make up the distance. He would have been among the group without this mishap.

Kenneth Smith, Palm Beach, in his A. C. F. was first with David McCullough, Palm Beach, also aboard an A. C. F. second and Frank Huckins of Jacksonville in a Fairform Flyer, third. They had started out in just that order but the two second boats failed to make up the difference by less than 20 yards.

Com. J. A. Hess, formerly of West Palm Beach, but now located in Detroit, occupied his old post as starter, while Vice-Commodore W. J. von Behren was in his usual post as head of the timers and scorers. A fleet of three Coast Guard cutters along with three smaller Coast Guard craft, attended during the two days and patrolled the course.

The course this year was more of a circle than in former years so that the side lanes ran closer to the West Palm Beach and the Palm Beach shores. Thousands of spectators lined both banks to watch both days' activities and the entire regatta went off without a hitch. Accumulated rain, held up for two days to let the sun through, came down in torrents, five minutes after the concluding handicap cruiser race had ended.

The annual banquet was held at the clubhouse of the Palm Beach Yacht Club on Saturday night, February 22, with over 200 guests present and winners being awarded their trophies.

A new trophy was added to the permanent list this year by a donation from Jack Dempsey, who hung up the award on the runabout event for boats plus 200 h. p.

The summaries of events follow:

SUMMARY:

Boat	Owner	Time	Time	Points
151 Hydroplanes, limited, 2 heats, 5 miles each:				
Miss Buckeye	Gibson Bradfield ... Barnesville, O.	6:01.2	6:08	400
Miss Meadowmere II	Chris Ripp ..... Jamaica Bay, L. I.	6:07	6:10	200
Bay Head II	Chris Ripp	6:09	6:30	100
151 Hydroplanes, unlimited, 2 heats, 10 miles each:				
Sparrow	Elmer Johnson .... Bennington, Vt.	12:24	12:21	400
Bay Head	Chris Ripp	12:26	13:31.3	200
Buckeye	G. Bradfield	13:47	16:15	100
Outboards, Class B, 2 heats, 5 miles each:				
Buckshot	Jim Daniels ..... Jacksonville, Fla.	8:15	8:05	300
Hurricane	J. T. Millikin ..... St. Louis	8:11.1	8:10.3	250
Sunny Girl	B. E. Lamb ..... Jacksonville, Fla.	D.N.F.	8:10	100
Outboards, Class C, 2 heats, 5 miles each:				
Muriel	F. Chestnut ..... Jacksonville, Fla.	7:06	7:24.4	400
W. P. B. Baby	J. T. Millikin	7:10	7:29	200
Hurricance	J. T. Millikin	7:37	8:06.2	100

(*Continued on page 142*)

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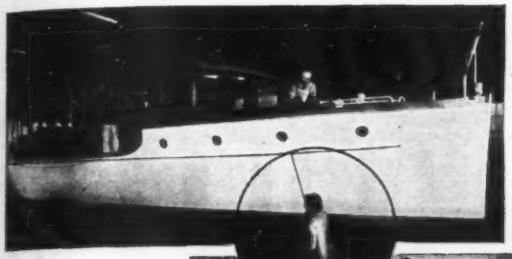
To Dawn Owners' Wives



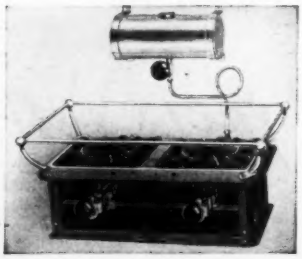
In the cabinet shop or the assembly building the future Dawn owner watches with anticipation the building of the yacht he is to enjoy. Meanwhile the lady in case betakes herself to the upholstery department and comfortably settles down to an orgy of selection. Deep piled carpets, rich in hue . . . . fabrics for berths and cushions that are a joy to look at and to handle . . . . materials for draperies lovely in texture and color . . . . are unrolled before her. No wonder decision causes her such acute but enjoyable worry. The cabins of Dawn Cruisers are finished in the owner's selection of materials. The assortment offered is a generous one, for the upholstery must be in keeping in materials and craftsmanship with the rest of the boat. If you cannot see this boat in reality at our yard, please let us send a catalogue to you at your home. Dawn Boat Corporation, Clason Point, New York City, Tel. Westchester 7000. Established 1906.

DAWN

TWIN-SCREW CRUISERS

Dawn 45-footer . . . Powered by twin-Lathrops, each 70 H.P. . . . Speed 14 M. P. H. . . . $16,900 afloat at Clason Point
Dawn 48-footer Express. Powered by twin Sterling Petrels, each 150 H.P. (5¼"x6"). Speed 20 M. P. H. $23,800 afloat at Clason Point

"Wilco" Alcohol Stove
in Dark Blue Baked Enamel



Standard Equipment on A.C.F., Matthews, Chris-Craft, Richardson and other fine boats.

Height, overall 10¼ inches
Length, overall 20½ inches
Width, overall 15¾ inches

PRICE, $28.00

Also furnished with three top burners, price $40.00.

Combination Coverall and Life Preserver Suit

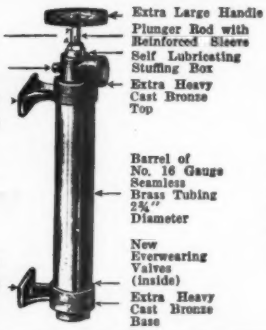
"UTE BUOY" Washable Life-Preserver Suit

Made of durable herringbone drill (not waterproof) in one-piece style, in white color only. Entire suit is triple needle stitched throughout and bartacked at important seams. Hookless Fastener all the way down front. The life-preserver feature is accomplished by means of two compartments on each side in front and one large compartment in back, holding in all eight tubes of rubber filled with finest quality Kapok. These rubber tubes are vulcanized and easily removed for laundering purposes. The compartments are so arranged as to allow plenty of freedom of movement. Kapok cannot come in contact with water. A double purpose garment, as this suit eliminates the use of any other life preserver.

PRICE $15.00

Come in and let us fit you to a UTE, or send us your check and measurements and we will ship you a UTE postpaid. Sizes: Small, Medium, and Large. Extra Large 10% extra.

Live Dealers Should Write for WILLIS' DISCOUNTS


Extra Knuckle Clearance
Priming Plug
Swivel Adjustable Bracket Permitting Port or Starboard Mounting
Swivel Adjustable Bracket Permitting Port or Starboard Mounting
Extra Large Handle
Plunger Rod with Reinforced Sleeve
Self Lubricating Stuffing Box
Extra Heavy Cast Bronze Top
Barrel of No. 16 Gauge Seamless Brass Tubing 2¾" Diameter
New Everwearing Valves (inside)
Extra Heavy Cast Bronze Base

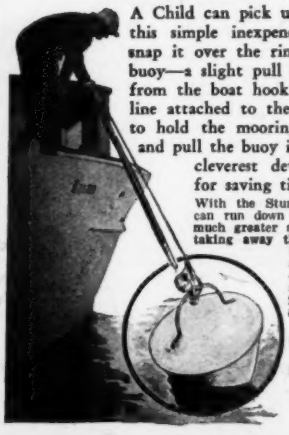
"WILCO" IMPROVED BILGE PUMP

A "WILCO" specialty—this popular bilge pump is widely imitated but absolutely unequalled. Built to stand hard usage and absolutely fool proof—nothing can get out of order.

1¼ inch supply, 1½ inch discharge. Length 23 inches.

Price $8.50

STURGES "Jiffy" MOORING SNAP

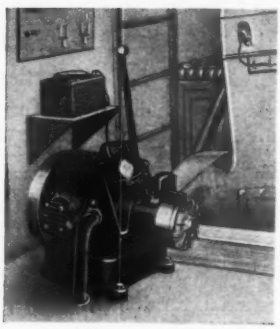


A Child can pick up a mooring with this simple inexpensive device. Just snap it over the ring in the mooring buoy—a slight pull separates the snap from the boat hook pole, and a light line attached to the snap enables you to hold the mooring, check headway and pull the buoy inboard—one of the cleverest devices ever invented for saving time and trouble.

With the Sturges "Jiffy" Snap you can run down on your mooring with much greater safety than ever before, taking away the previous worries of having to consider Wind and Tide. On sail-boats, one-man motor boats and in bad weather it is worth many times its cost.

Price in unpolished Bronze.....$4.90
Polished Bronze.. 6.50

Nickel Plated and Chromium Plated can also be furnished.



No Boat is too Small for this 50 lb.

BRANFORD LIGHTING PLANT

A powerful little gasolene motor direct connected to an efficient generator that will give you electric lights and current at all times. No cumbersome batteries required—a complete independent plant, quickly installed anywhere. Enables you to keep starting and radio batteries always charged. Ideal for sail boats, small motor boats, house boats and anywhere an independent source of electricity is desired.

PRICE, 6-Volts $140
12-Volts 145

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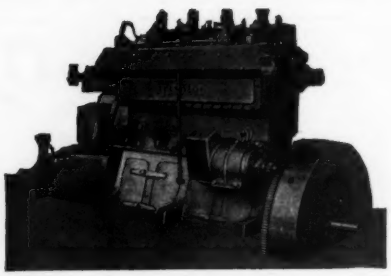

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STANDARD YACHT DIESELS

THE ALASKAN FLEET ADJUST COMPASSES

(*Continued from page* 48)

by the pelorus, the compass variation to it noted and corrected in this wise. Little magnets are roughly grouped around the compass and at the signal "ON!" the adjuster fastens the one, counteracting the error on this specific point, down with brass clamps. He again hails the bridge: "East O.K.! Steer nor'east!" and so on in progression the principal points are checked, during which time the officers on watch in the chart room must have no steel article in their pocket for even a spectacle case offers enough attraction to interfere with adjustments.

"Now we have a perfectly correct compass?" we inquire as the operation was concluded.

"There is no such thing," corrected the adjuster. "Due to varying effects of the combined magnetic forces found in a ship, the deviation changes with change of the ship's direction and it is frequently found impossible to reduce the deviation to zero on all points of the compass. The small residual deviations left when I am finished are tabulated on the Deviation Card supplied to the master who is thus informed of the deviation of his compass with the ship's head on each of the thirty-two points and when setting his course to steer he must allow for these deviations. Such cards and certification of compass are accepted as evidence before all Marine Inquiries," as he steps ashore after cross-checking our notes.

With compasses and clearance papers in order the fleet give a parting salute of three shrill whistles as they clear for Kodiak Island, Chilkat, Chilkoot, Cook Inlet, Copper River and our rich Southeast Alaskan salmon fishing grounds. With a double crew aboard Sea Foam we leave Seattle astern; scud across Washington Sound and Georgia Straight with ample sea room and to spare but as we draw near the Inside Passage, pick our way through rock and reef strewn narrow and winding waterways, where one may throw a stone ashore to port or starboard, then we are forcibly reminded of the fact that faulty running time to a matter of seconds or fractional compass and course errors will indeed lead to serious consequences. Working ship in such waters it becomes necessary to accurately determine the locale of each flashing light; obtain true bearings from the raucus drone of the lighthouse diaphone as we pass into the foggy night as the skipper frequently consults his private log with its wealth of pilotage data governing running time from point to point.

We hold over for Cape Mudge light, drop the hook at Butler Bay to await favorable tidal conditions in the treacherous Seymour Narrows where that menace to navigation, Ripple Rock, offers just another of the hazards encountered along the Pacific inland passages. Through the binoculars we observe a passenger unit of the Admiral Line and Alaska bound swing like a cork midst the whirlpool tide-rips which make it impossible for smaller tonnage to hold steerage way if but a few minutes ahead or behind favorable flood or slack tides. Cruising through Johnson Straight we begin to feel the ground swell under the bow of Sea Foam and we leave Pine Island Light astern, buck Queen Charlotte Sound, one of the many to be crossed and where you bear the brunt of the open Pacific with no shelter offering until you have crossed and fetch up with Egg Island Light to the nor-eastward. Avoiding inland waters we keep outside and take a dusting in Hecate Straights, leave Halibut Rocks to port, hug Banks Island, through Chatham Sound, on past Prince Rupert and across the International Boundary line kissing Wales Island and dividing the Portland Canal. Then a straight run to Ketchikan where we bid the boys farewell, thoroughly convinced that an accurate compass is a valuable asset to a coastwise mariner.

Is *your* compass accurate?

PALM BEACH STARTS FLORIDA SEASON

(*Continued from page* 138)

Outboards, Class D, 2 heats, 5 miles each:

W. P. B. Baby No. 1	J. T. Millikin	6:36.4	6:52.3	400
Brunhilde	B. E. Lamb	6:56.3	6:53	150
W. P. B. Baby No. 2	J. T. Millikin	6:49.2	D.N.F.	100

Runabouts, minus 200 h. p., three heats, 2 at 5, 1 at 10 miles:

Adriatic	W. Lambert	7:30.2	7:40	13:58	600
J. A. P. S.	R. B. Strassburger	7:32	9:16	16:35	170
Sea Lyon	Jack Rutherford	——	——	14:32	100

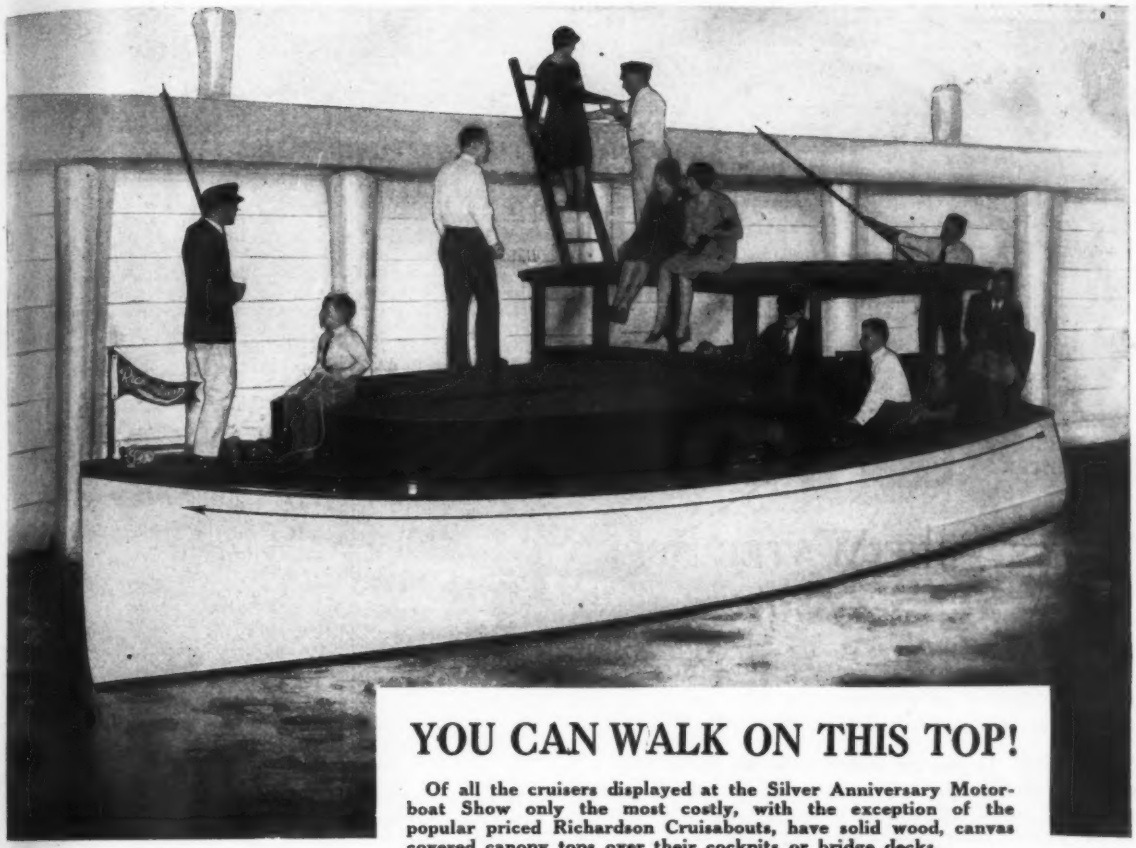
Runabouts, plus 200 h. p., 3 heats, 2 at 5, 1 at 10 miles:

Sea Lyon	C. Mendelson	6:53	6:52.4	13:57	600
Adriatic	W. Lambert	6:59.4	7:03.3	14:09	300
Chris Craft	E. R. Jones	D.N.F.	7:14.2	15:49	75

Cruiser race, handicap basis, one heat of 10 miles:

A. C. F.	Kenneth Smith	25:17	200
A. C. F.	David McCullough	25:28	100
Fairform Flyer	Frank Huckins	25:37.5	50

Advertising index will be found on 3rd last page



YOU CAN WALK ON THIS TOP!

Of all the cruisers displayed at the Silver Anniversary Motorboat Show only the most costly, with the exception of the popular priced Richardson Cruisabouts, have solid wood, canvas covered canopy tops over their cockpits or bridge decks.

A solid instead of a slatted top, especially on the smaller yachts, gives a place to stow a dinghy, life raft and other equipment or a place from which to cast when the Cruisabout is anchored at your favorite fishing ground. It makes possible easy boarding of the boat when moored to a high dock. It acts as an insulator from the heat of the sun and helps considerably to keep the cockpit warm and dry on wet, cold days.

The cabin trunks of the Cruisabouts are also built with the exceptionally strong construction found on the most costly yachts. The sides are made double thick, screwed and bolted together; the top is of ⅝" Cedar matched together and supported by carlins spaced on 12" centers. The most lubberish landlubber cannot put his feet through this strong construction even if he crashes aboard like a bag of ballast.

The cabin and canopy construction are only two of the many staunch, quality features that make the Cruisabouts (priced as low as $3585) comparable with boats valued at thousands of dollars above Cruisabout prices.

Other features are illustrated and described in the Richardson Cruisabout booklet "E-30." Write for it today.

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IT TOOK PATIENCE TO BUILD TYEE

(*Continued from page* 104)

distance, I used a thrust plate instead of a thrust bearing and reference to the photograph of this installation will show how this was mounted.

The after end of each motor bearer was cut to a shape that allowed me to insert two half-inch studs in each, from the rear, these studs being fastened with a nut at their inner end, for the accommodation of which a hole was cut through the bearer as shown. Another nut outside held the studs rigidly in place. The thrust plate was mounted on these, with a nut on each side of it, on each stud, and the propeller shaft going through a hole in the center, with a thrust bearing either side of the hole.

It will readily be seen that this thrust plate, which was ⅝ inch thick, could be adjusted to a hair's breadth either forward or astern. In hardest kind of service it worked perfectly.

Aft of the thrust plate and bearing I mounted a pinion which drove a Kellogg air pump, which supplied air for my whistle tank. This detail works perfectly, too. I always have thought an automobile horn is an anachronism on a motor boat. Hence the whistle.

A Brunner air gage forward, near the wheel, gives the tank pressure at all times, and there is a Brunner safety valve in the pipe line. Copper tubing of 5-16-inch diameter is used for piping the air.

I had always wondered if a universal joint installation on a motor boat would prove satisfactory. This one certainly has. I have a Hartman Model J universal installed, and I have never had a moment's trouble with it nor with any detail of the installation.

At the time I decided to install a new motor in my boat I vowed that nothing would tempt me to install it without a copper drip pan beneath it, a pan that would catch every drop of oil or grease that might drop from any part of the motor. A drip pan is the only solution of the dirty motor boat problem that I know of. No amount of care will keep a boat clean without one.

I chose copper, even though a little more expensive than galvanized iron because the latter eventually rusts through, and I wanted a permanent filth collector.

It was not difficult to make. I bought a sheet of copper wide enough to bend so it would fit the contour of a cross section of the motor base, including the cast flanges on which the motor rests, and then bend up ¾ inches outside of these. And long enough to extend beyond the drip of the fly-wheel bearing forward and the reverse gear after bearing.

One thing is very necessary to know in bending sheet metal cleanly, if one does not have the professional machines or tools for doing the job. And that is that a clean bend depends on clamping a square-edged piece of timber both above and below the sheet at the actual line of the bend.

For the four long longitudinal bends which fitted the oil pan to the under side of the motor crank case I used two long two-by-fours, edge to edge, and clamped together by ⅜-inch bolts passed through holes bored through the timbers at either end of the space occupied by the copper sheet.

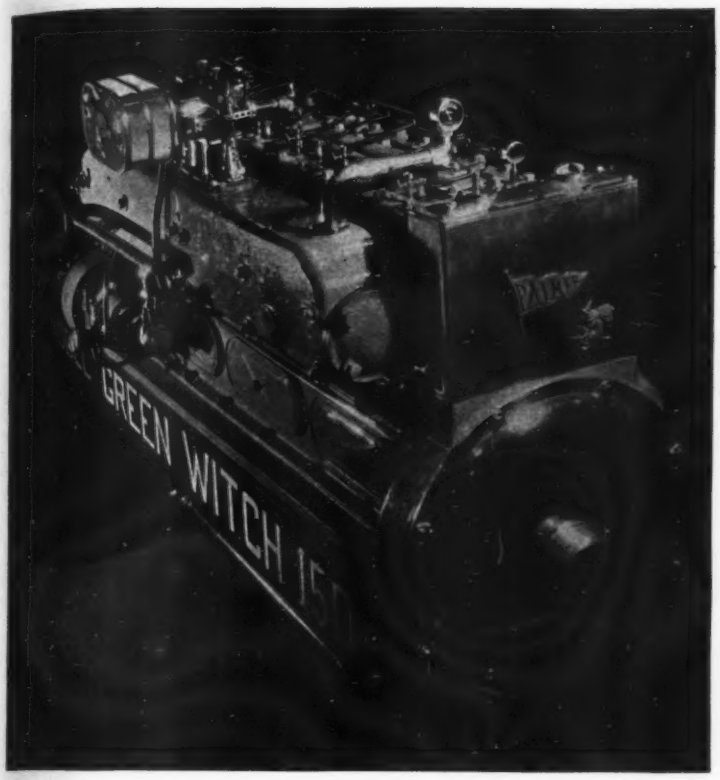
With the sheet clamped at the proper place between these two-by-fours, the bending was accomplished by pushing a small board (as long as the length of the bend), against the sheet so as to bend it to the right angle.

I stood the motor up on end, resting on its fly-wheel, to get the measurements for these four bends, and as soon as they were made I clamped the bent sheet in place against the under side of the crank case and marked the four holes through which the engine holding down bolts would have to pass through the flanges of the drip pan. These holes were punched out by using a hand punch and hammer, with the end grain of a block of oak as an anvil. Then the half-formed pan was bolted to the bottom of the engine right where it would eventually rest, and every bend in the flanges of the pan, where they fitted around the base of the motor, were marked. Where the after end of the pan had to slope up to fit the bottom of the reverse gear, two wedge-shaped pieces were cut out, and the sheet was then drawn together and soldered securely.

In making the remaining bends, which were most of them short, and square, small blocks of oak were clamped with C clamps on each side of the sheet and the ¾-inch high edge of the pan was bent up by sharp blows from a wooden paddle four or five inches wide. This method leaves a sharp, square corner to the bend as good as though done in a machine. Don't square the corners with a hammer; it leaves marks and does not do nearly so good a job.

Where necessary the rim around the pan was soldered at the corners, and then the ends of the pan were fitted in and soldered heavily, each end, of course, having a half-round section cut from

(*Continued on page* 146)



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Specifications	
Bore, inches	5½
Stroke, inches	7
Revolutions	1000-1400
Diameter of propeller, inches	26
Blades	3
Diameter of propeller shaft, inches	1¾
Length of propeller shaft, feet	5
Weight, lbs., iron base	2500

Dimensions	
Length of base, inches	65
Length, front end of flywheel to end of coupling, inches	86
Width of base, inches	23
Width between timbers, inches	15½
Bottom of base to center of shaft, inches	8
Center of shaft to top of motor, inches	27½
Diameter of flywheel housing, inches	24½
Center of shaft to top of engine bed, inches	⅞

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IT TOOK PATIENCE TO BUILD TYEE

(*Continued from page* 144)

it where the engine shaft went through the upper edge. I even soldered a slanting lip on the face of the forward end, around this half-round opening, to extend well out under the fly-wheel hub, to catch every possible drop of grease that might fly off.

When the motor was installed this drip pan fitted perfectly (how else could it fit, it was built right on the engine?). And I have a clean boat.

For cleaning out the pan, when grease enough accumulates to make this necessary, I bought a 75-cent grease gun, soldered eight inches of ⅜-inch copper tubing to it, and this reaches down to the bottom of the pan at the rear where gravity collects all grease. If necessary, a little hot water and Gold Dust, or something like it, may be sloshed around in the oil pan to loosen up the grease, and then pumped out.

The pan, by the way, was so fashioned that it does not extend beneath the carbureter or gas line, so that any drip from these does not create a dangerous condition. A separate small drip pan is fitted under the carbureter, but thus far it has never been needed.

Some authorities are very much against using the circulating pump on a marine motor for pumping out the bilge, but my own experience on a dozen boats I have owned or run proves to me it is absolutely safe, if the bilge intake is of large enough area and carefully screened with a brass screen of very fine mesh, so fine the head of a pin could not go through. I built a cage for my bilge intake, as shown in the photograph, of galvanized iron ½-inch angles soldered together at the corners. Around this I soldered a coarse galvanized screen. And over this soldered a fine mesh brass screen. The intake has about 24 square inches of area for a half-inch intake pipe, is easily cleaned and always works. It does away absolutely with hand pumping.

The last thing I did before painting and launching, I recalked the open seams and over the calking along the garboards I used black Stay-Tite seam composition. I used this, too, in several of the worst places under water. Other seams I filled carefully with white lead putty. Twenty-four hours after this dried out the boat was put in the water; she leaked practically not at all. A much-to-be-desired kind of boat.

The old gas tank was too small for the new motor, so I built an addition to it. Cut out the bottom to within 2 inches of the sides all around, then built the addition with a flange around its top to fit against this 2-inch border. Riveted and soldered the two together, and I have a tank good as new, and of 45 gallons capacity. Swash plates were fitted in it before being riveted together.

The spark and throttle control mechanism for my motor I designed to fit my particular need and idea of what these should be. Controls were forward, near the wheel on the port side.

The spark and throttle levers were of brass, cast from a pattern I whittled out of a piece of soft pine. They were mounted on the face of a one-inch brass pipe floor flange, cut square to take the bottom of the brass housing. This housing was fashioned of 1/16-inch brass plate, and was of a shape shown clearly in a photograph. It could be removed by taking out four screws.

Operating rods extended from the levers down through a one-inch brass pipe to bell cranks below the floor, and mounted on the under side of the floor board at this point. Operating rods were of stiff galvanized wire, all bell cranks were made of galvanized bars 1/16 by ¾ inches, and the jaws, riveted to the operating rods, were of very heavy galvanized sheet. Cranks and jaws were pinned together with brass bolts, and the nuts on these were soldered on to avoid trouble through lost nuts.

It was fun making the controls, and the whole system worked perfectly when installed. I commend it to any one owning a motor boat, small or large.

In installing my forward clutch control I used the conventional lever forward and crank shaft, the latter keyed to an extension of the reverse gear operating shaft. It may be of interest, however, to know that I used a ⅜-inch pipe for the connecting rod, and the jaws on either end of this pipe consisted of ¼ by 1¼-inch pieces of iron, through bolted to the pipe with ¼-inch bolts on which the nuts were run down tight and then riveted over so they couldn't come off. This connecting rod was cheaper than a forging, and just as strong.

For hauling the boat in and out of the lake I built a cradle, mounted on four 9-inch wheels. These wheels and the axles on which they turn I bought for $4 at a junk yard, and this cradle, running on planks nailed to cross braces at the width of the wheel tread, has made hauling out and launching a mighty easy proposition.

(*Continued on page* 148)

Advertising index will be found on 3rd last page

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(*Continued from page* 53)

block is provided with plenty of cleaning holes and ample water space has been arranged for positive cooling of the cylinders under all conditions. The liners in the block insure simplicity in removing the cylinder walls and cut down maintenance costs accordingly. Their uniform thickness results in maximum and even cooling of liners and pistons.

The crankcase is cast of aluminum in one piece with stiffening ribs to insure rigidity. The casting provides for nine steel-backed babbitt-lined crankshaft bearings, held in place by cast iron caps and fitted tie bolts. A feature of the sturdy Winton construction is the eighteen alloy steel sectional tie bolts tested to a tensile strength of 158,000 pounds per square inch, running from the bottom of the lower crankcase to the top of the cylinder block. These tie bolts act as main bearing studs, relieve the crankcase and cylinder block castings of all firing stresses and insure rigidity. Large handhole plates on both sides afford easy accessibility to the main bearings and crankpins.

Cylinder heads are made of chrome nickel iron individually cast and readily detachable without removing either intake or exhaust manifolds. They are completely water-jacketed and secured to the cylinders by high carbon studs. The cylinder head covers are made of aluminum and are easily removable to permit inspection of the valve mechanism.

Pistons are of the split skirt type, made of a special aluminum alloy. Cast-in steel bands are fitted to them in order to keep the skirt perfectly round under all conditions. Wrist pins are of chrome nickel steel with their bearings carried in the piston and lubricated by splash feed.

The crankshaft is constructed of chrome vanadium steel subjected to rigid inspection. The entire shaft is machined and drilled from main bearings through cheeks and pins for lubrication. The bearings are steel shells lined with best high grade babbitt, scraped to fit.

The connecting rods are I-section drop forgings of high carbon steel. The upper end of the rod is bored to take the wrist pin and the lower end is fitted with a steel shell, babbit-lined and held in position by a cap securely fastened with four steel bolts.

Intake and exhaust valves are made of special alloy steel to withstand severe usage and intense heat. Over-sized and interchangeable, they are mechanically operated by two camshafts. The rocker arms are bronze-bushed steel forgings, carrying hardened steel rollers and pins at each end, operated by camshafts at the top of the cylinder head. There are two camshafts of the built-up type, each fitted with two sets of cams, one for go-ahead and the other astern. All cams are of molybdenum steel, drop forged and hardened and held to the shaft by taper pins.

Injection valves are of the simplest possible design, of the needle type, opening outwardly. The fuel consumed by the cylinders is regulated by increasing or decreasing fuel oil pressure and controlling the duration of opening of the fuel valve.

Camshafts are driven by spiral gears off the after end of the crankshaft. Fuel pump, lubricating pump and water pump are all at the front of the engine and are all operated by a single crankshaft driven by double gears on the front end of a lay shaft which runs back to and is driven by the camshaft gear train at the after end. All gears are lubricated by pressure from the main oiling system. The fuel pump is of the reciprocating type with plungers and cylinders made of stainless steel. Water pump is likewise of the reciprocating type, four cylinder double acting, and of ample capacity to cool the engine properly under all circumstances.

IT TOOK PATIENCE TO BUILD TYEE

(*Continued from page* 146)

At this same junk yard, by the way, I bought 25 feet of ½-inch chain in almost perfect condition for $1.25, which I am using on Tyee's home mooring. Junk yards are handy things for motor boatmen of limited income.

On Tyee's mooring I use a bridle, instead of a single mooring line, as this not only eases the strain on bulwark chocks, but tends to keep her head to the wind.

One last thing, in closing this tale of Tyee, out of Patience, by Hard Work. If and when you change the name of your boat, don't fail to notify the Collector of Internal Revenue in your home district (no matter where the boat is used). He will register the change and probably assign you the same number you have always had. Failure to do this may cause you trouble.

Advertising index will be found on 3rd last page

The 16-foot runabout—40 h. p. motor—25 m. p. h.—seats 5—price, F. O. B. Works: $945.

The 21-foot runabout—115 h. p. motor—35 m. p. h.—seats 6—price, F. O. B. Works: $2,100.

THE LARGEST SELLING MOTOR BOATS IN THE WORLD

now offer more opportunity to more boat dealers

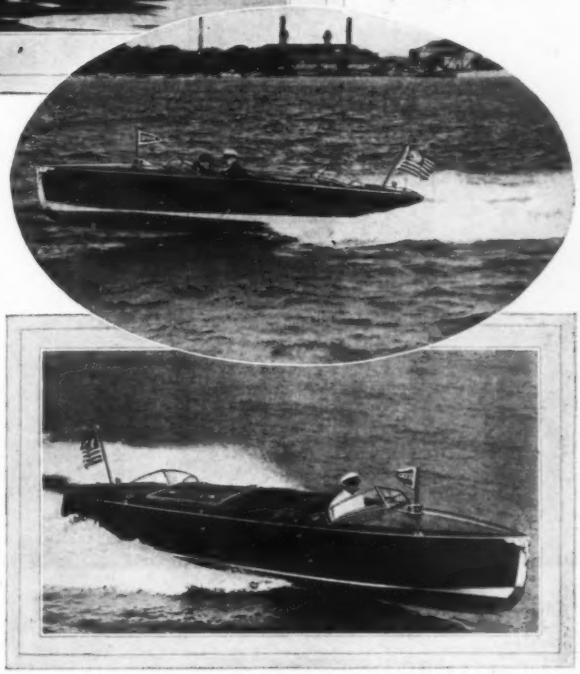
Already this year, Dodge has sold more boats than any other builder of completely equipped motor boats has ever sold in twice the time. This overwhelming public acceptance can mean only one thing—Dodge Boats offer the finest combination of speed and power, luxury and beauty, dependability and value ever offered in motor boats.

To boat dealers, too, this means something. With a great new plant producing these fine boats in such tremendous quantities—more dealers must be selling more and more boats.

Both parties to every commercial transaction—buyer and seller—must be satisfied. The buyer must be satisfied that he secured a fair price—and unless the seller is paid for his work, he cannot be satisfied.

28-foot runabouts—165 h. p. motor—speed 32 m. p. h.—price, $3,700; 300 h. p. motor—speed 45 m. p. h.—price, $4,500; Victoria Sedan—with 300 h. p. motor—speed 38 m. p. h. price, $5,300. All prices F. O. B. Works.

Dodge prices are more than fair. They are amazingly low. The Dodge franchise is fair—it offers a fair profit to boat dealers and an opportunity that is limited only by capacity to sell.



25-foot runabouts—125 h. p. motor—speed 32 m. p. h.—price, $2,500; 165 h. p. motor—speed 38 m. p. h.—price, $3,200; Victoria Sedan—165 h. p. motor—34 m. p. h.—price, $3,900. All prices F. O. B. Works.

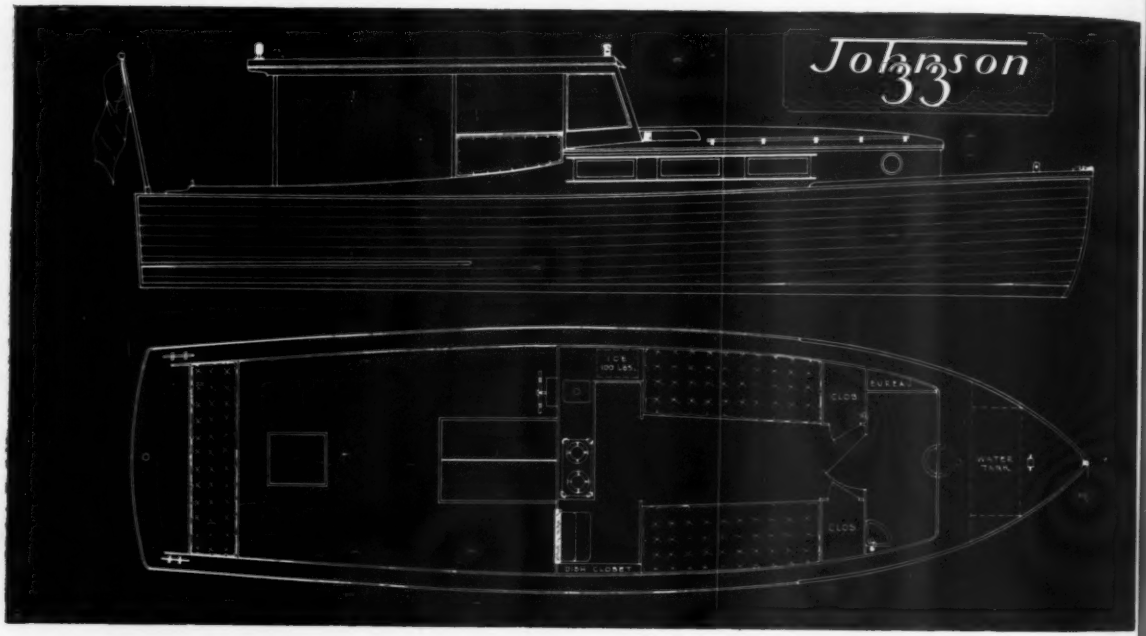
It is quantity production that benefits the Dodge owner and it is by quantity selling that Dodge dealers profit most. This great industry of boating is just beginning to realize that its growth has scarcely begun. Dodge has blazed a trail of leadership—and Dodge dealers are now traveling that trail to greater growth.

Many forward-looking dealers realized this fact early—and of course many choice localities have long since been closed by able and alert boat distributors and dealers. There are yet many opportunities for many more boat dealers and distributors. Your own territory may still be open. Write today—and see if you too can join this successful, sweeping growth to even greater heights of success. Horace E. Dodge Boat & Plane Corporation. Works: Newport News, Va. General Sales Department, 21 West 46th Street, N. Y. C.

DODGE BOATS

Greater Value *in this New* JOHNSON "33" *Sea-Skiff*

PLANK for plank, detail for detail of design and craftsmanship, the new Johnson thirty-three foot sea-skiff cruiser offers you far greater dollar for dollar value than any other make of sea-skiff. In comfort, beauty and



sea-ability it provides all that even the most critical buyer demands in a craft built especially for off-shore fishing or cruising. Single or double cabin; berths for six, large lavatory bureau, two clothes lockers, complete galley and full headroom. Speed 23 miles per hour with 150 H. P. engine.

Write today for full particulars on the new Johnson "33" and also the Johnson "38" sea skiff.

The famous Johnson "38." Single or double cabin. Accommodations for four to six persons. 200 H.P. Sterling engine; 22 M.P.H. Delivered complete with all essentials including china, silver, linen and blankets. Also radio receiver.

HUBERT S. JOHNSON BOAT & ENGINE WORKS

Bayhead, New Jersey

Advertising index will be found on 3rd last page

Anticosti: A late 75-footer, built by Fred Lawley and finished for beauty and durability with Climax paints.

Beauty that Endures

SLIPPING down the ways with a Climax finish, your ship is dressed in lasting beauty. And not only do they give the final touch of distinction—Climax paints also provide the utmost protection against wind, rain, snow, sun, grease, oil and general wear. That's why America's leading boat builders are using Climax paints. Only the finest ingredients, compounded to formula, especially to meet your seafaring conditions, are used. Tints and shades are always the same.

CLIMAX WHITES. The finest immaculate seagoing whites ever produced. Furnished either in an absolutely flat coat or in a glossy finishing coat. Mixing gives you precisely the type of finish you desire—with just the right amount of gloss. The flat coat is the most permanent, heaviest-bodied, easiest and fastest working priming and surface-building coat available. Suitable for wood and metal, exterior and interior, salt and fresh water. The gloss white is a matt gloss finishing coat. Covers marvelously and is free from brush marks. Never yellows—doesn't turn chalky, crack or peel. To satisfy your expectations, see that your ship is finished with Climax—the paint of enduring beauty.

THE CLIMAX CLEANER MFG. CO., CLEVELAND, OHIO

New England Office: **282 Moody Street, Waltham, Mass.**
Pacific Coast Office: **135 South Swall Drive, Los Angeles, Calif.**

DISTRIBUTORS: *Armstrong & Galbraith, Inc., 373 Fourth Ave., New York, N. Y.—Stearns Marine Service Co., 40 Broad Street, Boston, Mass.—C. J. Hendry Co., San Francisco, San Pedro and San Diego, Cal.—Pacific Marine Supply Co., Seattle, Wash., Portland and Astoria, Oregon.—Emil Aarup. 5111 South Main St., Los Angeles, Cal.*

CLIMAX BOAT PAINTS

. . a new thrill for yachtsmen . . a speedboat that flies

EASTMAN *Flying Yacht*

Yachtsmen, ahoy! Come aboard the Eastman Flying Yacht and enjoy a new thrill . . . speedboating and flying—combined! ¶ The Eastman offers yachtsmen an ideal pleasure craft. For exciting, exhilarating sport, nothing compares with piloting this fast, smart ship. ¶ The Eastman is easy to fly—to take off—and to land. It leaves the water in 8 to 12 seconds—climbs 1000 to 1200 feet per minute. ¶ The Eastman Flying Yacht has a cruising speed of 90 m. p. h.—112 open throttle. Two roomy cockpits seat four comfortably and with full load the ship has a range of nearly 300 miles, or over 400 miles with three aboard. ¶ Write for catalog describing this speedboat with wings. Dealers are invited to write for details.

$9985
FLYAWAY
Detroit

DETROIT AIRCRAFT
UNION TRUST BUILDING, DETROIT
CHANIN BLDG., NEW YORK :: ROOSEVELT BLDG., LOS ANGELES

Eastman Aircraft Corporation
Ryan Aircraft Corporation
Lockheed Aircraft Corporation
Aircraft Parts Company, Inc.
Parks Air College, Incorporated
Parks Aircraft Corporation
Blackburn Aircraft Corporation
Aircraft Development Corp.
Marine Aircraft Corporation
Grosse Ile Airport, Incorporated
Gliders, Incorporated
Detroit Aircraft Export Corp.

YARD AND SHOP

(*Continued from page* 68)

ELEMENTARY OCEANOGRAPHY

In a very valuable new book H. A. Marmer has prepared an interesting treatise covering in an elementary way practically everything that has been discovered in the science of oceanography. Mr. Marmer is assistant chief of the Division of Tides and Currents of the United States Coast and Geodetic Survey and accordingly is in a position to deal with the subject in an authoritative manner. His survey is full of fascinating descriptions of the instruments and methods used in scientific research throughout the vast area covered by the seven seas. D. Appleton & Company are the publishers.

Features of the Universal display at the New York Show were the new 45 h.p. Bluejacket, a pair of straight eight 115s, and a stern drive

THOROUGH BROKERAGE SERVICE

The impression may prevail among certain prospective purchasers of cruisers and yachts that, having decided on a craft which suits them and having approved the plans of the architect, they are faced with the problem of personally supervising all the details of construction as the boat passes through the various stages of building. To many this would be a formidable, if not impossible, task.

As a matter of fact, it is quite possible to purchase a yacht through a broker, who will not only draw the plans to the owner's ideas and tastes, but will also assume full responsibility for following the craft through until it is delivered, ready for use. The Henry J. Gielow organization, for example, makes a specialty of offering to the purchaser of a yacht, a service which relieves him of all of the details, even to the extent of providing for its operation. Having ordered the craft and decided that the plans as drawn meet the owner's approval, there is nothing left for him to concern himself with other than the enjoyment of its use, and he may rest assured that everything will be handled just as perfectly as careful supervision can make it.

GOLD CUP APPOINTS REGATTA COMMITTEES

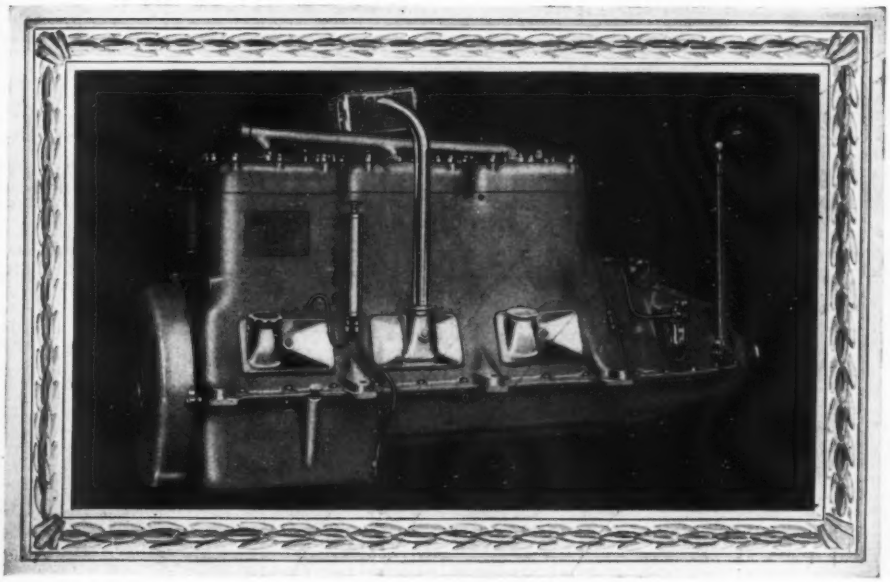
Barron G. Collier, Frederick R. Still and Governor Morgan F. Larson have been appointed honorary chairmen of the executive committee of the New Jersey Gold Cup Association, sponsors of the speed boat classic to be held on the North Shrewsbury River at Red Bank, N. J., August 16 and 17. At the same time, the Association announces that Inglis M. Uppercu has been appointed general chairman of the regatta.

Honorary judges selected by the association are: Admiral F. C. Billard, General Coleman Du Pont, Commodore John A. Harris, Honorable Harold Hoffman, Governor Morgan F. Larson, Irving Marshall, William B. Potts, Col. Jacob Ruppert, Donald E. Sterner, Commodore Jacques Thorner, General Howard Borden, Van Rensselaer Halsey, Jules Heilner, Commodore Henry H. Hower, John A. Lynch, Uzal H. McCarter, Honorable Anning S. Prall, Ferdinand S. Salmon, Henry R. Sutphen, W. H. R. White and George F. Townsend.

The Regatta Committee will be headed by Gerald C. Holbrook, commodore of the Red Bank Yacht Club and Charles F. Chapman, secretary of the racing commission of the American Power Boat Association will serve as chairman of the Race Committee.

(*Continued on page* 198)

Advertising index will be found on 3rd last page



SCRIPPS POWERED

The wide acceptance of SCRIPPS Motors is best expressed by the ever growing list of standardized craft offered with SCRIPPS as standard or optional equipment.

BANFIELD
6 Models
CHRIS-CRAFT*
6 Models
CORSAIR "36"
GAR WOOD "40"
HACKERCRAFT*
KING SEA-SKIFFS
KYLE "43"
MATTHEWS*
MINETT-SHIELDS
NORTH STAR
ROBINSON SEA GULL
Twin Installations
SEA LYON "40"*
STEPHENS
WHEELER "PLAYMATES"*

Foreign
BRITISH POWER BOATS
OSBORNE-CRAFT (ENGLAND)
CLAUS-CRAFT (GERMANY)
DESPUJOLS (FRANCE)

*Optional

The New Model 120

The latest addition to the SCRIPPS line, Model 120, is distinctly a power plant for the smaller speed cruiser and smarter family craft.

100 H. P. at 2000 R. P. M.

MEDIUM DUTY

With performance written in its every line and refinement apparent in its every detail, SCRIPPS Model 120 establishes an entirely new standard of motor value.

An inbuilt mechanical fuel pump, a back-fire arrester, a 12-volt starting and ignition system, a magnetic "remote control" starter switch, and down-draft carburetion features usually found only in the larger, more costly motors cause the SCRIPPS Model 120 to stand apart.

Designed from the ground up to endure the hardships of marine service, the SCRIPPS Model 120 fulfills in every respect the expectations of those who have been awaiting the advent of a strictly marine motor of moderate power in which are included all the latest advancements of the day.

* *Described and illustrated in a booklet which contains full information on all SCRIPPS 15 Models—15 to 200 horse power. Send for your copy.*

SCRIPPS MOTOR COMPANY, 5819 LINCOLN AVENUE, DETROIT, MICHIGAN

SALES AND SERVICE: NEW YORK, N. Y., Holt Marine Engineering Corporation, 611 West 125th Street—BOSTON, MASS., Noyes Marine Company, 305 East Congress Street—PHILADELPHIA, PA., Marine Equipment & Supply Company, 116 Walnut Street—MIAMI, FLORIDA, J. Frank Knorr, 528 N. W. Seventh Avenue—NEW ORLEANS, LA., Arthur Duvic's Sons, 122 Chartres Street—SEATTLE, WASH., Atlas Engine Company, 69 Columbia Street—WILMINGTON, CAL., Yacht & Motor Sales Corporation.

SCRIPPS

THE MOTOR THAT CROSSED THE ATLANTIC

FAST EXPRESS CRUISERS TREIBER DIESEL EQUIPPED

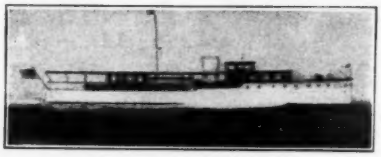
are now providing their owners with **MORE MILES PER HOUR** of comfortable, vibrationless cruising with DIESEL SAFETY and ECONOMY

To Treiber Engineers belongs the distinction of having SPONSORED and ESTABLISHED the Present Day Trend to Light Weight and High Speed in Diesel engine practice.

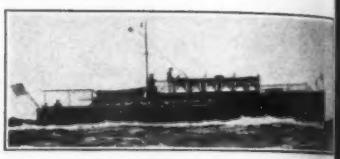
To Treiber Engineers belongs the added distinction of having produced the SMALLEST, as well as the LARGEST, Light-Weight High-Speed SUCCESSFUL Yacht Diesels, so far built anywhere.

The Treiber Line, as regularly catalogued, consists of Electric Generating Sets 7½ to 70 K. W. and Marine Engines 65 to 3000 H. P. Larger sizes are specially designed and built to meet practically any Horse Power requirement.

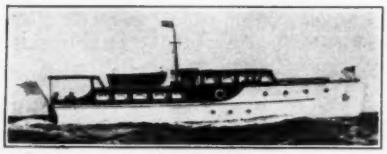
Make a personal investigation of The Treiber... and, as a first step in this direction, give us the size of your present or proposed boat..the power you expect to put in her... and the speed desired. We shall gladly send you, without obligation, Bulletins descriptive of Treiber Diesels suitable to your purpose.



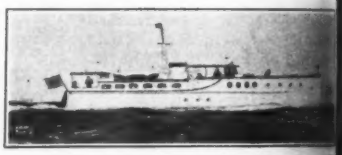
Length 116'9", Beam 19'11"
900 H.P. Treiber Diesels
(Twin 450 H.P. 12-cyl.)
One 7½ K.W. Treiber Diesel
Electric Generating Set



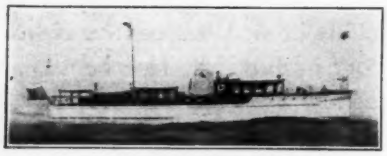
Length 80', Beam 14'
600 H.P. Treiber Diesels
(Twin 300 H.P. 12-cyl.)
One 7½ K.W. Treiber Diesel
Electric Generating Set



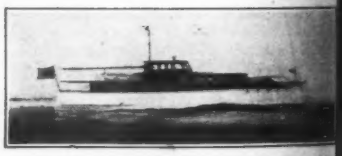
Length 50', Beam 12'6"
150 H.P. 6-cyl. Treiber Diesel



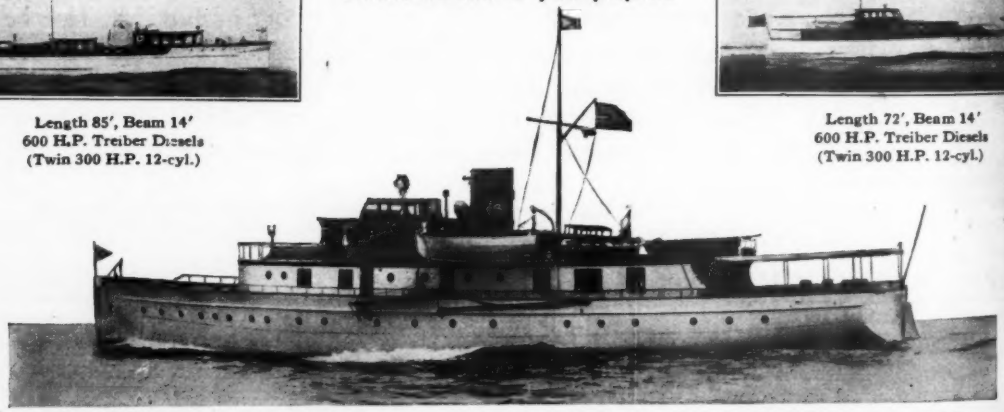
Length 55', Beam 12'6"
300 H.P. 12-cyl. Treiber Diesel



Length 85', Beam 14'
600 H.P. Treiber Diesels
(Twin 300 H.P. 12-cyl.)



Length 72', Beam 14'
600 H.P. Treiber Diesels
(Twin 300 H.P. 12-cyl.)



Length 150', Beam 24'—1500 H.P. Treiber Diesels (Twin 750 H.P. 12-cyl.)—Two 35 K.W. Treiber Diesel Electric Generating Sets

TREIBER DIESEL ENGINE CORPORATION

DEPARTMENT MB, CAMDEN, NEW JERSEY, U. S. A. ✱ CABLE ADDRESS: DESELMOTOR

Advertising index will be found on 3rd last page

Only a Few Weeks More!

ARE YOU a boating enthusiast, getting ready to slip your land-bound moorings for a joyous summer afloat? Does your blood tingle in anticipation of an evening on the bay with the mauves and purples of a twilight sky; or the enchantment of a winding stream with its gay tapestry of sunlight and shadow? Only a few short weeks now—Are you getting ready?

Is your boat KAINER equipped?

If you are having a boat built to specifications, your builder probably is using Erico and Kainer Marine Fittings to be SURE of pleasing you. If you are overhauling and outfitting your own, Erico and Kainer Specialties with their fine construction and snappy appearance will add to the joy of motorboating, and your pride of ownership a hundred fold.

How about a new 1930 catalog? May we send you one TODAY so you can check your requirements?

KAINER & COMPANY
CHICAGO

761-771 Mather Street

Fairform Fliers

are equipped with our

Compasses
Clocks
Barometers
Pilot Glasses
etc.

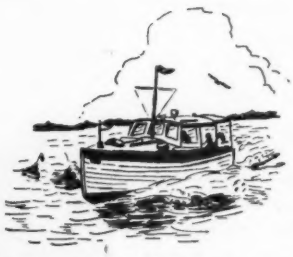
THE BEST EQUIPMENT TO BE HAD—
IF WE CAN SUIT THEM,
WE CAN SUIT YOU

Send for our catalog.

Kelvin & Wilfrid O. White Co.

112 STATE ST. BOSTON ☆ 38 WATER ST. N. Y. CITY

If there's a cruise being planned for the Summer

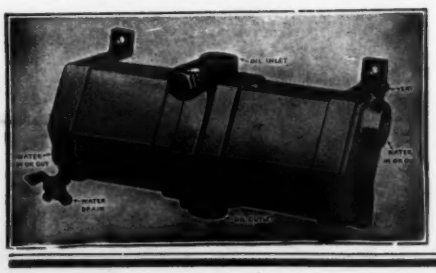


NOW—while you're getting that little cruiser scraped, polished, painted and generally overhauled—have a Groco Oil Cooler attached to your engine. Your oil will be kept at an even, efficient temperature no matter how long the cruise—whatever the speed you make. No loss of efficiency from an overheated engine—no suffocating smoke in the cabins—a Groco Oil Cooler gives your motor a chance to operate continuously at maximum efficiency.

Write to-day for details and prices.

GROCO

REGISTERED U.S. PATENT OFFICE



OIL COOLERS

Standard equipment on the finest craft and engines—specified everywhere by men who know boats.

GIVE THE ENGINE ITS DUE

(*Continued from page* 96)

and lined up correctly; if your bearings are all of the inter-changeable type, then it is comparatively simple to slip them into place, blue the shaft, scrape down the high spots where the blue is transferred to the bearing here and there, continuing until an even coating of blue is well distributed over the entire bearing, then ease off on the sides of the bottom and top halves, scrape out the oil grooves and oil hole (if any), and make a permanent fit by removing or replacing shims or filing flanges of bearing cap.

The connecting rod bearings are the ones which will invariably show the most wear, and should receive very careful attention in inspecting, adjusting and fitting; they are of the split type, most of them having shims in between the bearing halves for adjustment, and, like the main bearings, are, generally, of babbitt, either of the poured or interchangeable types. Fitting, replacing, etc., is similar in process to that employed on the main bearings. On some of the heavy duty motors, however, you may find that bronze bearings have been used, and they must be adjusted until they are snug but with no drag on the shaft when it is turned; this would be too loose for the babbitt bearing, however, this fairly loose fit is employed as the bronze expands much more than babbitt; consequently after they are warm, the bronze bearing is just the proper fit, while the babbitt would remain loose and pound. Fitting the bronze bearings up snug would cause them to run too hot, gripping and scoring the shaft. A good method of gauging the correct fit for babbitt bearings in connecting rods is to tighten until the weight of the rod alone will cause it to drop and the bearing rotate slowly on the shaft; while with bronze, the weight of the rod should cause it to fall freely.

Piston pin bearings, or that bearing on the upper end of the connecting rod, are always of bronze and invariably of the bushing type, which fact necessitates renewal of both pin and bushing in case of looseness; fitting of new bushings on the old pins is poor economy, as when the bushings are worn, the pins will be found to be out of round, and out of round pins will wear loose even in new bushings after a few hours operation. Such repairs as knurling, making a diagonal cut through the bushing with a hacksaw and then contracting it by driving back in place with thin shims fitted on the outside of the bushing, etc., can be used as a last resort; however, such jobs are only for temporary or emergency cases, and should never be left as permanent.

Camshaft bearings are of either babbitt, bronze, or sometimes cast-iron, and are of both the split and bushing types. They should be inspected, cleaned, adjusted or renewed, as the occasion demands, and then assembled. Watch for end motion which must be removed by undercutting a gear hub or shimming in back of gear hub with bronze washer.

All bearings in the crankshaft assembly should also be adjusted to remove end play, which is done by undercutting gear hubs, shimming in back of gear hubs or flange couplings with washers, or fitting in new end bearings with new flanges to take up the wear.

When fitting new shims in bearings, make them of metal, not ones made of cardboard, leather, etc., are sure to become soaked and allow the adjusting half of the bearing to become loose, resulting in sheared off bearing bolts or bearings pounded out.

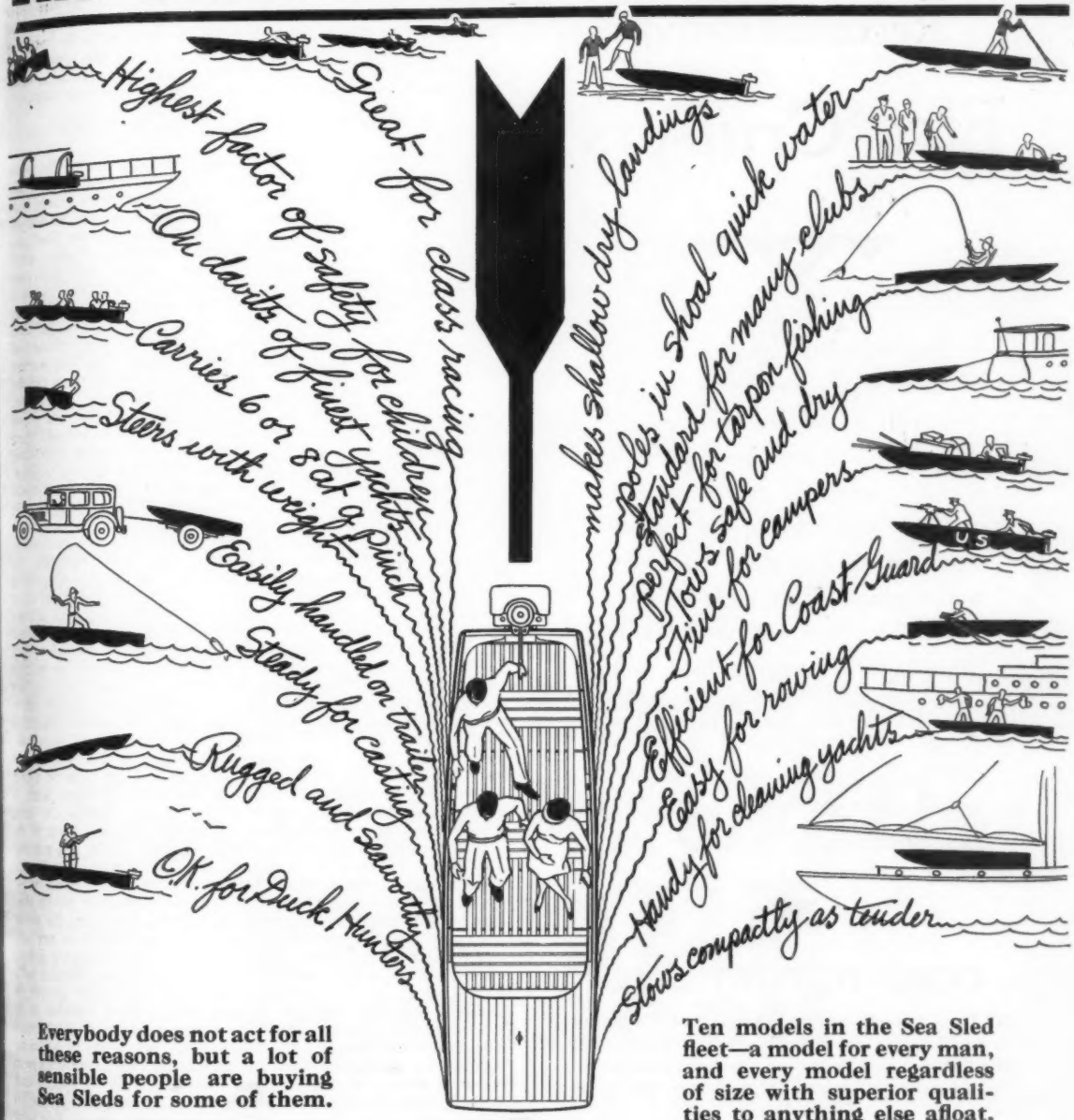
Main crankshaft bearings on two-cycle motors are of either babbitt or bronze, the split and bushing types both being used, however, they must be made a very neat, but not too tight fit in order to hold the crankcase compression which is so vital to the satisfactory operation of this type of engine. The lower connecting rod bearings should be fitted with just a slightly perceptible up and down movement, otherwise they will run hot and burn out; the babbit type can be fitted to a neater fit than the bronze. As they are of the split type using shims between the halves, they can be easily adjusted. On the smaller types of two-cycle motors, the upper and lower halves of the main shaft bearings are cast integral with the upper and lower halves of the crankcase; and, in order to adjust them, a thinner gasket between the crankcase halves must be fitted.

In some of the late type four-cycle motors which force the lubricant by heavy pressure through a hollow crankshaft, ring type bearings are used. There are no oil grooves or holes in either of the bearing halves, and no shims are used, the bearing flanges fitting snugly to one another. The theory is not to allow any particular place such as side clearance or grooves for oil reservoirs, in place of which a clearance of from .001 to .002 of an inch is allowed all around the bearing to keep a constant surface of oil in between the bearing and crankshaft.

(*Continued on page* 158)

Advertising index will be found on 3rd last page

The Craft of One Hundred Uses



Everybody does not act for all these reasons, but a lot of sensible people are buying Sea Sleds for some of them.

$150.00
For Class B Motor

Ten models in the Sea Sled fleet—a model for every man, and every model regardless of size with superior qualities to anything else afloat.

$195.00
For Class C and larger motors

Model 13 heads for happiness, exhilaration and health and leaves a wake of facts

ADDRESS
THE SEA SLED CORPORATION
Sole Licensee under Hickman U. S. Patents

TRADE MARK REG. **SEA SLED** U. S. PAT. OFFICE

SEA SLED
SPEED · · WITH COMFORT AND · · SAFETY

PLANT
WEST MYSTIC, CONNECTICUT

Reconditioned

Elco Cruisers

A few reconditioned Elco Cruisers of all models—guaranteed by Elco Works—are now offered for prompt delivery. Each boat has been thoroughly overhauled as to hull, engine, paint and fittings—by expert workmen at the plant where she was originally built. Elco keeps a careful history of each cruiser from the time of original purchase, making it possible to inform you exactly of the service and care it has received. This policy assures you of a cruiser fully worthy of bearing the Elco name plate.

COME TO PORT ELCO

247 Park Avenue—at 46th Street, New York City

At Port Elco you may inspect the six new models of the Elco fleet, and obtain prices and complete information on Elco Reconditioned Cruisers. Or write Dept. MBG-1 for full particulars.

Elco

CRUISERS

(PLANT AND MARINE BASIN AT BAYONNE, N. J.)

GIVE THE ENGINE ITS DUE

(*Continued from page* 152)

eliminating any metal to metal contact on wearing surfaces and stopping wear. As this film of oil is maintained by the heavy pressure maintained in the hollow crankshaft, the only method for this oil to distribute itself over the bearing is by means of this slight clearance; consequently, in adjusting this type, be sure and fit it with a very slight, ut just perceptible clearance, otherwise, you will have a job renewing these bearings very shortly.

PISTONS, RINGS AND PISTON PINS

Clean pistons and inspect as to evidence of blowing by, which is noticeable by the dark colored, burnt appearance. This may be due to rings stuck in grooves, ring slots worked around until they are in line, rings worn, cylinder worn, scored or warped, or piston scored, worn or warped; and whatever the fault may be, that is the thing which must be remedied. Pistons which have a decided rocking motion in the cylinder bore will cause piston slap and excessive wear, therefore, the cylinder should be reground and new pistons, rings and wrist pins fitted. When cleaning the old pistons, remove the rings from grooves, clean the grooves out very thoroughly, scrape the top, bottom and back of rings and place the old or new rings back into position. When assembling, coat the pistons and rings with clean cylinder oil. Where trouble is found in getting the rings to compress enough to enter the cylinder bore, make a noose of strong fishing twine, place this loop around the first ring to be entered, draw tight until the ring is fully compressed, tap piston with block of wood, and the ring will slide into the bore without any further trouble, provided the rings have been correctly fitted to the size of the cylinder bore. The noose is then slipped over the next ring in turn, and so on until they have all been entered. In order not to break the old rings when removing from piston, or to eliminate breakage of the new ones when replacing, slip three hacksaw blades in back of each ring to be removed or replaced, spacing the blades on thirds. The rings will ride up on these blades and can be easily removed or replaced without damage. When fitting new rings, micrometer (or have it done) the cylinder carefully and get rings from .001 to .002 of an inch larger than the micrometer reading. Square up the ring grooves in the pistons and measure carefully for the width of face and depth, making sure to allow for a ring which will fit the groove tightly as to face and allow a clearance in depth. Rings too loose in groove, or with grooves out of square, will allow compression and oil to work past, finally becoming stuck by oil and carbon deposits. Purchase the new rings and get them of a good grade. There are many types on the market today, some of which have made extravagant claims, others which are doing excellent work as replacements. Inquire around some of the shops as to which are the best for your own needs, and purchase that type. Rings with expanders in back of them, are fine for the two lower rings, provided there is a slight looseness of pistons, the ring expanders being used to overcome piston slap; however, provided the cylinders are in good shape and the pistons a fair fit, these expanders do not aid compression in any way, rather there is a slight power loss due to the extra friction created by the additional pressure out against the cylinder walls. Oil scraping or oil ventilated rings for the lower groove are really a necessity in many engines, and a good addition to all. They will cut oil pumping to a minimum, give better performance and much less carbon. In case you do not wish to go to the expense of purchasing these oil regulating rings, the illustration shows a method of drilling from four to six evenly spaced small holes through the piston in back of the ring, and filing away the lower edge of the lower ring groove, which causes this lower ring to scrape the surplus oil from the cylinders and force the oil through the return holes back to the base, meanwhile distributing oil over the cylinders on the up-stroke. It is a very good plan, when installing new rings, to pin them in place after having spaced the gaps on thirds. The lower lip of the piston rings are filed away as shown in the sketch, and a small drill rod is threaded and screwed into the bottom of the ring groove to pin in place. Cut these pins off flush with the pistons. When new rings are too tight in grooves, ease off by tacking a piece of emery cloth to a square of board, laying the ring flat on the emery cloth and working around with a circular motion, thereby doing an accurate job. There should be from .0015 to .002 of an inch clearance or ring gap, at the ring cut for each inch of cylinder bore to allow for expansion. Most ring manufacturers or motor manufacturers specify the correct measurement, which measurements should be faithfully followed. When filing at the ring gap to get the proper clearance, file the material away from the body of the ring, rather than off the end of the lip, as shown

(*Continued on page* 162)

Advertising index will be found on 3rd last page

Behind the WINNERS-

EMPIRE
marine oil

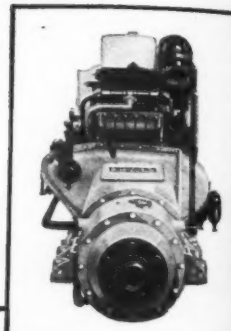
The oil you use in your boat determines its performance and the length of the engine's life. Frequently the oil used is the only difference between *winners* and *also-rans*. EMPIRE Marine Oil—because it is refined from 100% pure Pennsylvania crude oil only for marine use—fortifies your engine against wear and strain and assures you *winning* performance.

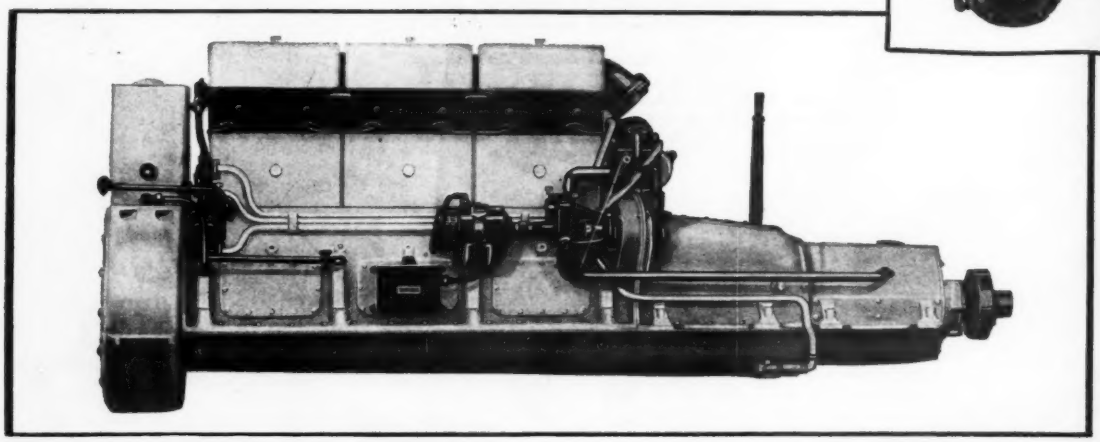
There is an EMPIRE Oil which scientifically meets the requirements of your craft. Its use means minimum wear on cylinder walls and bearing surfaces . . . easier starting at all temperatures . . . and, due to the piston seal it creates, more speed and power and smoother action in any boat. EMPIRE is the standby of boat owners, builders and racers. One trial and it will be yours always—*if it isn't already!*

PENNSYLVANIA PETROLEUM PRODUCTS Co., Inc.

PROVIDENCE . . . R. I.

BUDA
M.A.N.
MARINE DIESEL





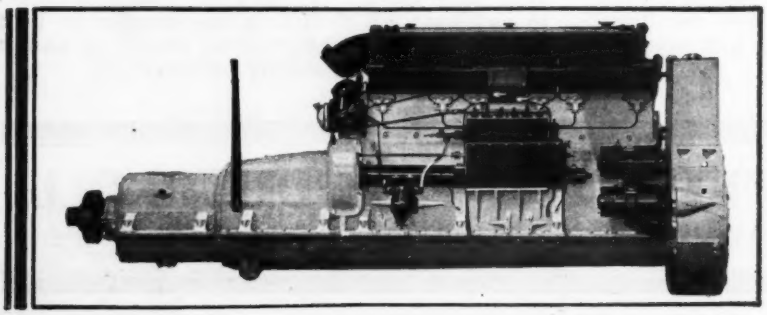
180 H.P. 6 CYLINDERS HIGH SPEED LIGHTWEIGHT

WITH OR WITHOUT REDUCTION GEAR

The Buda-M.A.N. Marine Diesel is a 4-stroke cycle type with airless fuel injection. It is a full Diesel, requiring practically the same space as a gasoline engine of equal horsepower. It is of clean-cut design and eliminates accessories and drives, such as magnetos, distributors, starting compressors, etc. No preheating devices are necessary. Electric starters and generator are furnished as regular equipment as shown in the lower illustration.

The 180 HP engine is 6½" bore x 8¾" stroke, with Morse type reduction gear, 2½ to 1. This model develops 173 HP at 800 RPM and 180 HP at 1000 RPM. Also supplied in 4-cylinder size, developing 100 HP at 1000 RPM.

Write for copy of bulletin No. 722.

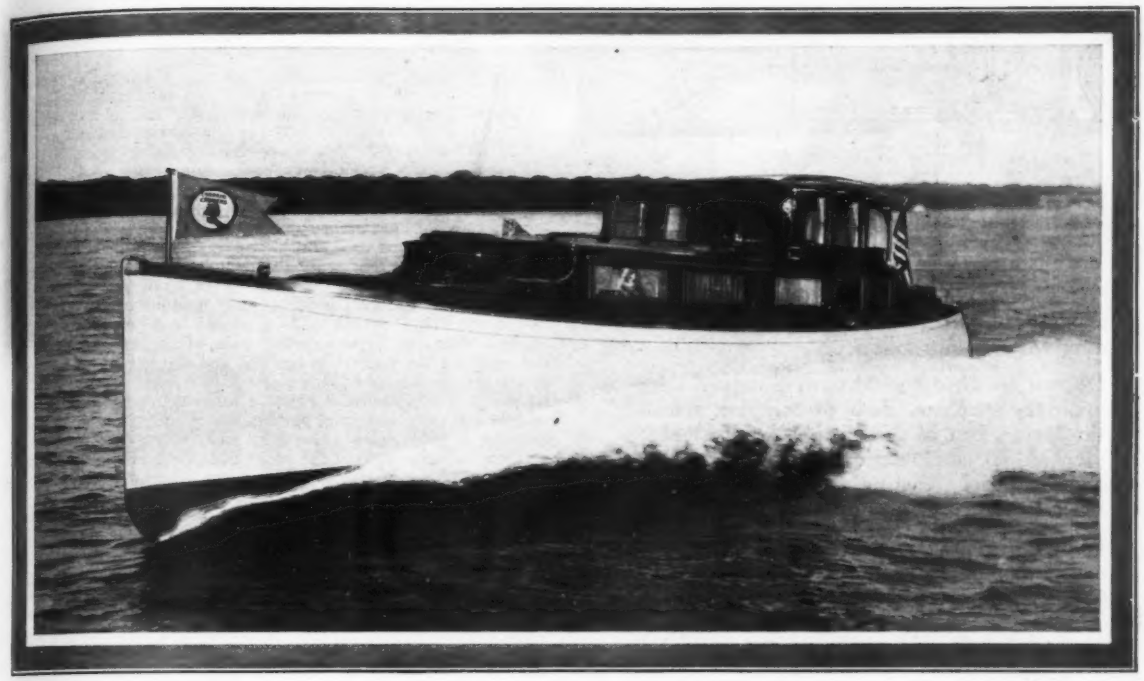


Branch Offices:
30 Church Street - New York, N. Y.
664 Mission Street - San Francisco, Cal.

THE BUDA CO.
HARVEY, ILLINOIS
CHICAGO SUBURB

ESTABLISHED 1881

Advertising index will be found on 3rd last page



SPRING Blows in the SUMMER

The whistling winds of Spring speak sunshine and open air . . . broad sweeps of open water that stretch to far horizons . . . and boats . . . boats. Little craft that bob about . . . heavier hulls that cut their mighty way . . . sailing boats and power boats. Boats . . . boats. And it also sings of a special boat . . . a craft that seems to ride on the winds' own wings . . . to have been born of the fleecy, graceful outlines of a drifting cloud . . . to have a gathering gale in its heart for an engine. A boat that's staunch and true and beautiful . . . and as swagger as the buccaneers from whom it takes its name. A Corsair . . . whose enclosed deck house alone, designed by LeBaron, is sufficient to set the spring breeze singing rhapsodies of praise as it blows in the season for boats.

CORSAIR BOAT COMPANY

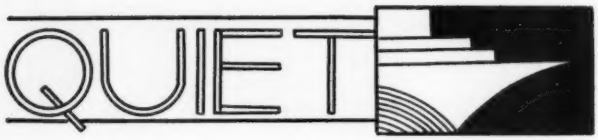
1030 Buhl Building
DETROIT

Yards:
TRENTON, MICHIGAN
on the Detroit River

CORSAIR CRUISERS

S. CLYDE KYLE
Corsair Distributor for the Metropolitan New York Territory
504 General Motors Bldg.
New York City

Western Office: Rialto Building
San Francisco, California



QUIET running at any speed. Exhaust noises silenced without sacrificing power. New pleasure in boating for you and your guests. An unexpected boon for those on land. The new M2 Maxim Silencer.

Do not confuse the Maxim Silencer with ordinary mufflers. It is of complex acoustic design, but of the simplest conceivable mechanical construction, consisting of but one single iron casting. It does not impose back pressure. Is simple to install.

Remember, waterfront towns are passing ordinances making the silencing of marine engines imperative.

It is made in every pipe size; standard 1½" to 4"; the prices ranging from $10.00 to $30.00. It can be installed practically anywhere in your exhaust pipe line.

Model M2 Maxim Silencer. Quiets exhausts of gasoline and small Diesel engines where water, salt or fresh, is injected into exhaust pipe. Constructed entirely of cast iron with standard pipe thread tapped in one end for inlet and in opposite end for outlet. No joints held together by bolts to form possible source of leaks. No internal parts which can possibly become loose, rattle or break. Does not impose any back pressure. Is self-draining. Your exhaust pipe size determines size Silencer. Silencers are also made for large Diesel engines. Stocked by marine jobbers and dealers.

Send me descriptive literature and prices on the M2 Maxim Silencer.

.....

.....

.....

THE MAXIM SILENCER CO.

HARTFORD, CONNECTICUT

GIVE THE ENGINE ITS DUE

(*Continued from page* 158)

in one of the illustrations, or, if there is much to be removed, take half off the body of the ring and half off the lip. Filing off on diagonal cut gaps can be taken off either end as they are both alike. Two or three piece rings, or rings with special gap cuts, should be filed only as specified by their manufacturers.

Piston pins, as specified under Bearings, should be renewed whenever play is found, as it is best in the long run to replace wrist pins and bushings together. When assembling, make positive that the pins are securely held into position by the set screws, or whatever method used, and that everything is locked so that it cannot come loose and score the cylinder walls. In some cases, however, those pins are held into place by bronze caps, piston rings, wire rings, etc., being of the floating type; make sure that everything is secure. There should be from 1/16 to 1/8 of an inch clearance between either side of the upper part of the rod carrying the piston pin bushing and the bosses on the inside of the pistons into which the piston pins project; however, excessive play at this point can create a rapping knock which is intermittent and very annoying, particularly if one of the rod bearings becomes slightly loose. This play can be removed by inserting washers on either side of the upper end of the rod, through which the piston pins are slipped. Allow some play at this point, filing the washers down until they are of the correct thickness.

Pistons in two-cycle motors have a baffle plate on the top, as illustrated, which must be fitted so that it is next to the intake port, in order to deflect the incoming gases in such a manner as to aid in scavenging the combustion chamber; so don't forget this fact when assembling the motor. The pistons and rings must be a tighter fit in this type engine in order that leakages from the combustion chamber to the base, or vice versa, will not occur. The pistons are invariably longer and have four rings, one ring being below the wrist pin for base compression. Needless to say, this lower ring must be in good condition so as not to lose this base compression. The rings are placed so that none of the gaps ride over either of the ports, as the ends of the rings would have a tendency to catch. Endeavor to space these gaps as nearly on thirds as possible. The proper method of pinning rings has been touched before. It is a good plan on any motor, as it keeps the ring gaps from getting one above the other and losing compression, besides wear on the cylinder walls will be more uniform.

FLYWHEELS

To some of us, the flywheel may seem to be only a chunk of iron; however, it is a very important part of the assembly and has a very noticeable effect upon the motor's operation as regards throttling without danger of stalling, vibration and general smoothness of operation. High speed motors, when used in heavy cruisers are very apt to stall frequently as the clutches are let in before the engine's revolutions have been high enough to cause the flywheel momentum to carry the sudden load. While much of this can be gotten away from by slipping the clutch in starting, this is bad practice and soon ruins the clutch. A better way to eliminate this trouble is to shrink a steel band around the flyweel rim, of sufficient thickness to add the desired weight. If the outside of the flywheel rim carries the ring gear for the starter, then it will be necessary to fasten three or four bolts through the web or the flywheel, plug all openings, and pour lead in over the web of spokes until it finishes flush with the rim, thus adding considerable weight. This can be done at most any machine or blacksmith shop at a reasonable figure. Some of the manufacturers, however, have both the light and heavy flywheels for their high speed engines. Take the matter up with them, and they will either sell you one of the proper weight, or tell you the best method of altering the one you already have. In assembling, be sure to get all keys, set-screws or bolts, set up tight, as a loose flywheel makes a very bad knock and one which is very destructive to the motor. Where the flywheel is continually coming loose, have the hub bored out and bushed to fit the crankshaft very neatly (the best repair is to have the crankshaft end turned down taper, the flywheel hub bored out taper and a neatly fitting tapered bushing made, the key being fitted to extend through the bushing neatly, the end of the crankshaft threaded for a S. A. E. nut, and the flywheel being pulled on the bushing and crankshaft by the nut, and then locked). If the hub is found to be cracked, as from flywheel having been loose or key being driven in too hard, have a steel band shrunk over the hub at some blacksmith shop. Never shim a loose flywheel key, as the strain is too heavy; get a piece of key stock and fit a new one. Flywheels which fasten by bolts to a flange should be drawn up tight, and any suspicious looking bolts replaced. Lock the bolts securely so they cannot become loose.

(*Continued on page* 166)

Advertising index will be found on 3rd last page

KOVEN

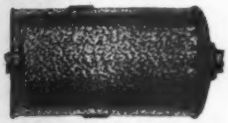
MARINE TANKS
of all
Shapes and Capacities
for GASOLINE, AIR *and* WATER

TAKE advantage of our engineering service department in solving your storage tank problems. In addition to a very complete line of standard size tanks we design and build tanks in any metal, any shape or size to fit any given space—tanks of greater capacity but occupying no more space than your present gasoline or water containers.

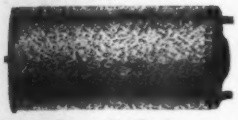
Also manufacturers of Marking Buoys, Ventilating Stacks, Exhaust Manifolds and Rudders in any metal. We have a complete galvanizing department.

L. O. KOVEN & BROTHER, INC.
154 Ogden Avenue JERSEY CITY, N. J.

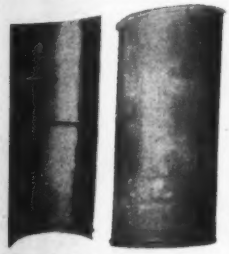
Koven Standard gasoline tanks—4½ to 110 gallons



Koven Muffler Tank



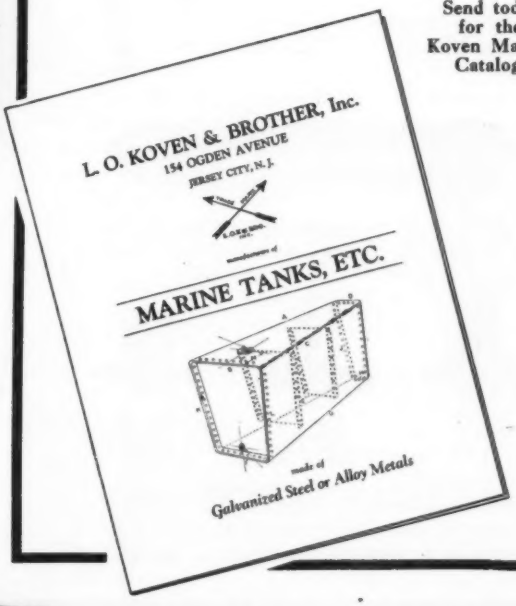
Koven Air Tank



Koven Ventilating Stack—made to specifications

Koven Buoy

Send today for the Koven Marine Catalog.



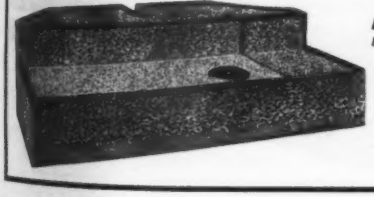
Koven galvanized oily waste can

Koven galvanized rudder

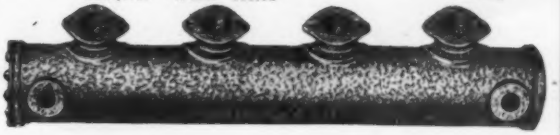
Koven custom tank built to fit contour of hull

Koven special bow tank

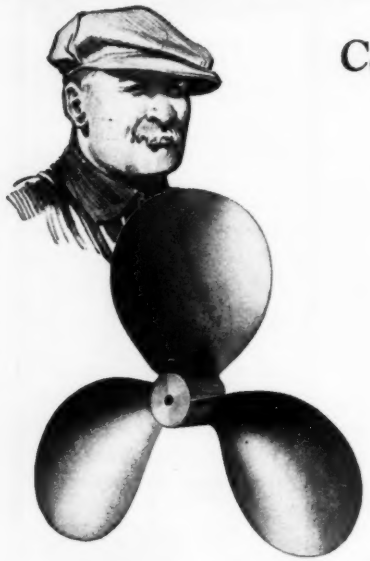
Koven custom made gasoline tank to fit around rudder post



Koven galvanized exhaust manifold. Water cooled



COLUMBIAN
BRONZE PROPELLERS



Cap'n Allswell says:

"When you buy your Fairform Flyer you'll find the business end insured for life with a Columbian Propeller an' rudder!"

In casting Columbian propellers, rudders —or any other piece of marine hardware— nothing but *new metals are ever used.* Such bronze will last the life of the boat, and is the best investment you can make. May we send you our new catalog?

Special bronze struts designed for babbitt or Cutless Rubber bearings.

Fig. 400—Cruiser Rudder

No.	Size	Price
401	16 x 16	$16.00
402	18 x 16	17.00
403	18 x 18	19.00
404	20 x 18	21.00
405	20 x 20	24.00
406	22 x 18	24.00
407	22 x 20	32.00
408	22 x 22	33.00
409	24 x 20	33.00
410	24 x 22	33.50
411	24 x 24	34.50
412	24 x 26	50.00
413	26 x 26	50.00

COLUMBIAN SHAFTING

Finest quality shafting made in Monel Metal, steel, piston finished Tobin Bronze, Hy-Ten-Sl Bronze, and Ever-Dur Bronze.

FIG. 154—UNIVERSAL SHAFT LOG

Columbian universal shaft logs are made in shaft diameters ranging from 7/8 inch to 2 inches.

Fig. 170 Stern Bearing

Fig. 155 Heavy Square Flange Stuffing Box

Fig. 160 Plain Stuffing Box

Reverse Control Outfit

Fig. 450

This outfit consists of handle, choice of floor plates or brackets, two levers and rod ends. Price complete, $20. Sold in parts if desired.

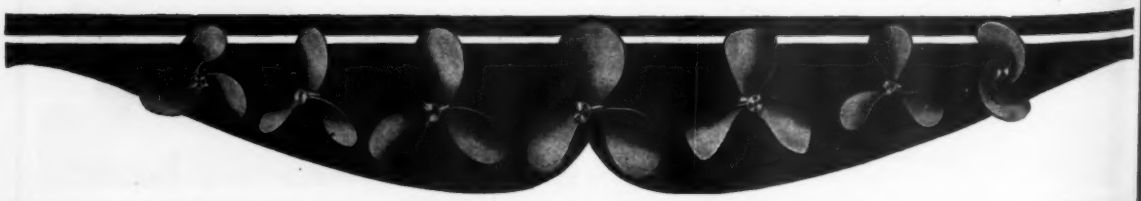
Fig. 457 (left). A compact straight lever control; lower lever moves in opposite direction from handle. Price complete $16.00.

Fig. 458 (right). This control needs no counter shafts; lower lever moves in same direction as handle. No water comes through the cockpit floor. Price complete $27.00.

COLUMBIAN BRONZE CORP.

208 No. Main St., Freeport, L. I., N. Y.

H. A. B. Sneve Co.: San Francisco, Seattle



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Photograph shows the Champion Llenroc II, a standardized 42 ft. express cruiser powered for 32 M. P. H. with a 200 H. P. Sterling Petrel Motor and Monel Metal propeller shaft, 1¾" diameter by 13 ft. 3" long in Goodrich Cutless rubber bearings. Built by the TOPPAN BOAT & ENGINE COMPANY, *Medford, Mass.*

Monel Metal Shafts

now standard equipment on Toppan's "Champion Llenroc II" Express Cruisers

MR. H. M. LEWIS, Vice-President of the Toppan Boat & Engine Company of Medford, Mass., writes: "We intend to furnish Monel Metal as standard shafting on the new 1930 Champion Llenroc 42 foot model.

"By substituting Monel Metal, we are able to use an engine of 50 greater horse power with a shaft of the same diameter. We are not obliged to weaken the keel by reboring, and the necessity for larger stuffing boxes, special size struts and changed couplings was eliminated."

Such rigorous tests confirm anew the supremacy of Monel Metal for seafaring service. They indicate a surpassing degree of ruggedness and dependability under extreme conditions.

Tough, strong, rigid... Monel Metal shafts reduce whip and vibration to a minimum. Monel Metal won't rust, it resists corrosion, and in service it develops a mirror-like surface which reduces friction to a fraction.

Your boatyard will be glad to tell you how Monel Metal can contribute to the pleasure of boat owning and at the same time reduce maintenance costs. Or we will send you complete information.

Write for illustrated booklet, "*Monel Metal Shafts and Brightwork.*"

THE same properties that make Monel Metal so valuable for propeller shafts, also make it the ideal metal for many other marine parts and fittings. Monel Metal is available in the following shapes and forms: sheets—tubing—strip—wire rope—wood screws—nails—rivets—bolts and nuts—lag screws, etc. Have your next boat put together with Monel Metal wood screws.

Monel Metal is a technically controlled Nickel-copper alloy of high Nickel content. It is mined, smelted, refined, rolled and marketed solely by The International Nickel Company. The name "Monel Metal" is a registered trade mark.

Monel Metal shafts increase the life of babbit or bearing bronze and are especially recommended with Goodrich Cutless rubber bearings.

INCO MONEL METAL

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

Here's a Polish That Leaves No White Deposit

NOTHING mars a polishing job like a chalky, white deposit left in seams and crevices. I. C. U. Metal Polish imparts a high, lasting lustre to brass, copper, bronze and other polishable metals, with little labor, and without a white deposit.

It is harmless, non-acid, greaseless. An ideal polish for marine use, for, by its chemical make-up, it produces a lustre that tends strongly to delay tarnishing.

Sold in the marine field for many years. If not at your dealer's, we will be glad to send you a sample free—or any of the following sizes prepaid: 1 gal., $1.75; 1 qt., $.75; 1 pt., $.45. Give name of your dealer with order.

Dealers—Write!

THE LIVINGSTON CO., DIV. T
NEW HAVEN, CONN.

I·C·U

METAL POLISH
for BRASS, COPPER, BRONZE

GIVE THE ENGINE ITS DUE

(*Continued from page* 162)

CYLINDERS AND VALVES

Scrape all the carbon deposits and wash off with gasoline; give the water jackets a good cleaning by either flushing with a strong lye solution, a caustic soda solution, or with steam, and flush out with clean hot water. This will remove most deposits; however, in case it doesn't, get a piece of stiff wire and poke it around into the bottom of the jackets and pockets, as well as around in the cylinder head jacket, then flush out. Where it is impossible to reach any pockets, as around valves, etc., drill a small hole at some point where you will be able to reach the desired spot with the wire, and as soon as the jacket has been cleaned, drill, tap, run in a pipe plug dipped in white lead, hacksaw off and file flush with casting. Give the cylinder a good washing with gasoline both inside and out, inspect bore for scores and caliper or mike to see if out of round or egg-shaped. Provided the other parts of the cylinder bore are in good shape, scores or scratches can be repaired by having an alloy welded into the defect and then honed to a fine finish. A job of this nature will last as long as the rest of the cylinder, and the old piston and rings can be used. Out of round or egg-shaped cylinders can only be reground or rebored, along with the fitting of new pistons, rings and wrist pins; and, while the cost may seem a little high, the result is very gratifying, both in economy and performance, and the job will only be the fractional cost of a new motor. After bearings have been taken up or renewed and new rings installed, be sure and inspect the top of the cylinder bore for the ridge of metal which is left just above the top of the ring travel. This ridge can be easily removed by scraping out with a bearing scraper. Rings striking this ridge will make a very annoying knock, and it is hard on bearings. Cracks, either on the inside or outside, running into the water jackets, should be cleaned out, the ends of the crack drilled and tapped, after which a small plug is screwed in to keep the crack from spreading, and the crack filled by brazing on the outside and welding an alloy on the inside of the bore, which is the only permanent repair, outside of replacement of the casting. In some cases, where the crack is on the outside of the waterjacket, it can be patched, as explained in previous issues of MoToR BoatinG. Engines which pump oil can be helped by placing a baffle, as illustrated, on the bottom of each cylinder skirt.

Clean valves all over, inspect the faces of valves, valve seats in cylinder block or head, and stems. If they appear to be in good condition, grind in slowly, as shown in sketch, until a continuous fine line or seat is evident on both the valve face and valve seat. Remember, the finer the seat, the longer it will last, as a wide seat is more apt to catch and hold a small piece of carbon or dirt, which will hold the valve off its seat and cause it to burn very quickly, while the fine seat will squeeze the dirt or carbon to one side and seat itself. After the grinding has been completed, clean out all the old grinding compound from the valve seat, wash the valves off carefully, smear the valve faces with lubricating oil, rotate on seat to polish, and then assemble. In grinding, use the coarse compound first, then finish with the fine; and don't spin valve around continuously in one direction; rather, make it about half a turn one way, then back; do this several times; move valve part the way around, repeat, and so on until you have a fine seat. Use only the weight of your hand and arm applied to the screw driver, brace and bit, or valve grinding tool; otherwise the pressure will only tend to force the compound out from between the valve face and the valve seat. When it is necessary to fit new valves, it is best to secure a valve reamer and true up the seats, or it will take a long time grinding in a perfect fit. Worn stems of valves will necessitate the fitting of new valves. Worn guides should be bushed, or renewed if of the replaceable type, as they make a streaky mixture by leaking air on the intake side, and leak exhaust fumes on the exhaust side, as well as having a tendency to allow carbon to form on the stems and stick them in the guides. Valve springs are often found having lost their tension; renew them, or stretch by driving a wedge or chisel between the coils. Broken valve springs should be renewed. In assembling the valves, adjust the tappets so that there is about .012 of an inch clearance between them and the ends of the valve stems. After the boat is overboard and has had about 15 hours running, the final adjustment of the tappets should be made while the motor is hot, setting the exhaust tappets for a .010 clearance and the intakes for an .008 clearance. Most manufacturers specify what is correct in this respect, and it is best to use their settings. Valve timing, as regards the setting of the camshaft gear so that the valves will open and close at the proper intervals, is a subject in itself; however, unless you have the manufacturer's

(*Continued on page* 168)

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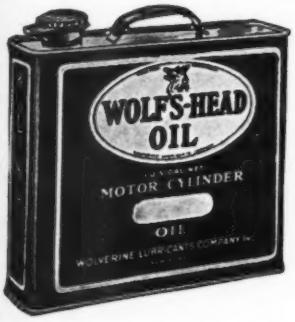

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SPRING OVERHAUL

Whether your beloved craft is a tiny out-board, a fast cruiser or one of the big wind-jammers, the best and most shipshape way to obtain the material for your Spring fitting-out is to make your selection from the TIEBOUT catalog at your local dealer or boat-yard.

If more convenient, just make up your complete list and send it in to us. Everything from that dab of spar-varnish for the truck to the bit of seam filler around the garboard-strake, and any or all of the thousand and one "gadgets" and "fittings" in between. Anything you need, and everything "right."

—0—

Just another proof of "rightness," those splendid Huckins FAIRFORM FLYERS, mentioned so frequently in this issue are practically, "TIEBOUT equipped throughout."

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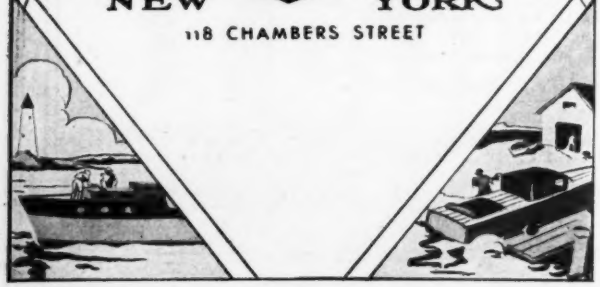

GIVE THE ENGINE ITS DUE

(*Continued from page* 166)

settings, which should be preferred, the following will give good results:

Motors of from 400 to 600 r.p.m.

Exhaust opens from 25 to 35 degrees in advance of bottom center, the closing, of course, depending upon the contour of the cams, but should close about 5 degrees after top center.

Intake opens 10 degrees after top center, and should close at from 10 to 20 degrees after bottom center.

Motors of from 600 to 1,000 r.p.m.

Exhaust open at from 40 to 45 degrees in advance of bottom center, and should close at from 5 to 10 degrees after top center.

Intake opens at about 10 degrees after top center, or as soon as exhaust valve is closed, and closes at about 20 to 25 degrees after bottom center.

As these settings are approximate, it is best to get in touch with the factory or agent for your particular motor, if in any doubt as to the correct timing; however, if your motor is an old one or an orphan (one whose manufacturer has gone out of business), or one of the home built variety, then the above setting will be found to work out satisfactorily.

If you have had trouble with exhaust valves burning out or having a short life, replace them with some of the chromium steel head types on the market, and if they are properly seated and adjusted, you will find that trouble eliminated.

CARBURETER

If you are not capable of handling the adjustments and cleaning of this delicate piece of mechanism, return it to the manufacturer or to some shop equipped to do this class of work and have it given a thorough inspection, cleaning and repairs, after which any needed adjustment can be made; however, if you feel that you can do this work, go to it. As soon as it has been dismantled, clean thoroughly, examine for evidence of defects, wear or leaks; dry out, clean and shellac the float, if of the cork variety, or inspect for leaks if of the copper float type, repairing with solder any leaks found; level the float and see that it is set to the proper height in the bowl (most carbureters set the float at from 1/32 to 1/16 of an inch below the top of the needle valve nozzle, so that gas will not leak from the bowl into the mixing chamber when the motor is not running); renew packing in gland around the needle valve; examine and adjust air valves and springs, renewing any found defective; examine the intake gasoline valve for leaking, grinding it in with chalk if necessary; see that point of needle valve is not bent, broken or worn, if so renew; clean out any and all spray nozzles; see the throttle valve is tight on its shaft, renewing the shaft if it is worn so that it can admit air around its bearing; inspect and repair any electrical units, such as heaters for starting, as they often become short circuited; and assemble, using an entire new set of gaskets coated with shellac. Make a temporary adjustment until the motor is started, when the final ones can be made. Hot air pipes leading from the air intake to the breather from the base or to a stove around the exhaust pipe, are fine, and if your motor is not so equipped by all means make one up similar to the one shown in sketch.

Needless to say, any strainers in the carbureter should have new screens, as the old ones are of such a fine mesh that they cannot be cleaned entirely.

The intake manifold, if of the type with no method of applying heat, may not be giving satisfactory performance. One of the sketches shows a home-made intake manifold heater which is simple and cheap to construct. Placed around the rising column from the carbureter, it will be found to aid in vaporizing the gasoline and in allowing the motor to be throttled down without missing. Another aid is the use of a specially made intake gasket with coarse copper mesh over the hole. The sketches will show how this is easily made, and it is certainly a great help in cases where one or more cylinders have a tendency to load up while running idle or at slow speed.

As a sort of safety measure, on engines where the air intake is not piped to the base or to a hot air stove around the exhaust pipe, fitting a cone made up of very fine copper gauze and tightly clamped over the mouth of the air intake on the carbureter, will be found to prevent the sucking in of dirt, etc., and eliminate much of the danger of fire from backfiring while the engine is cold.

(*Continued on page* 170)

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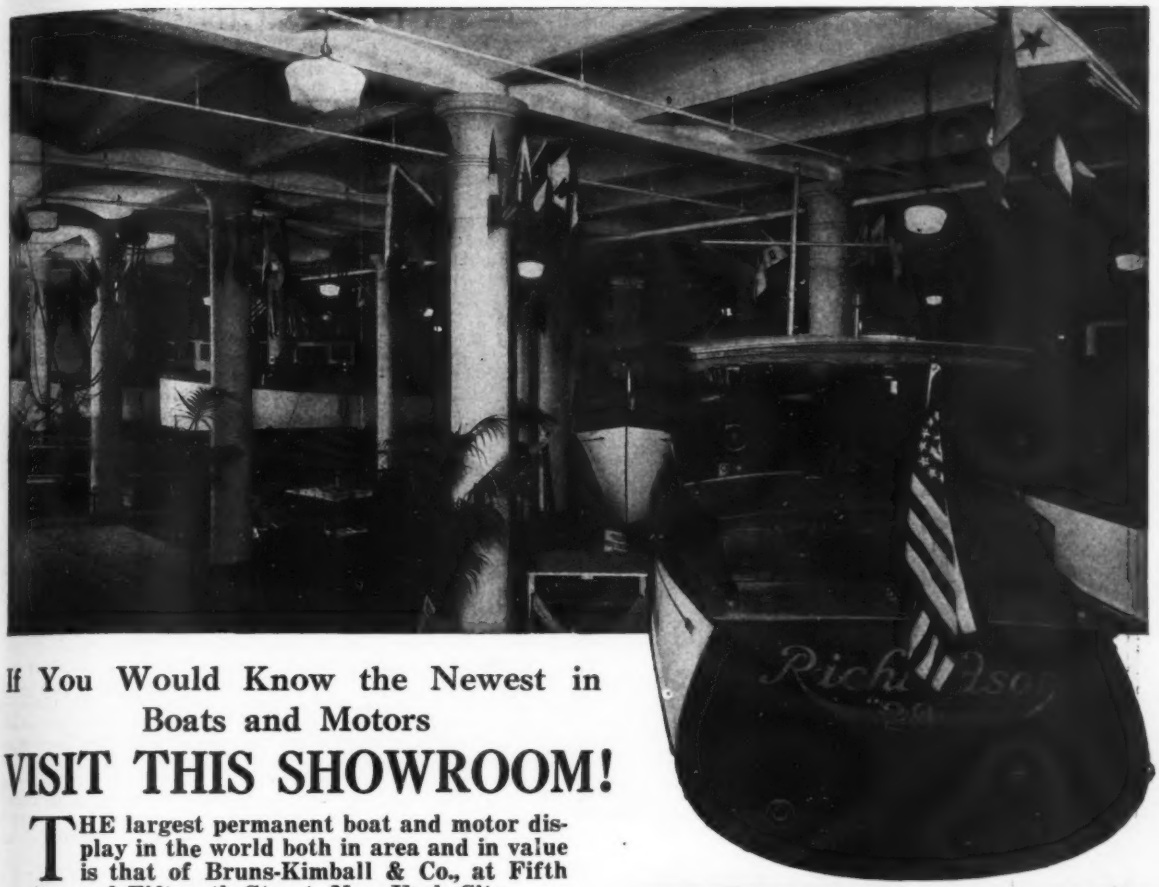


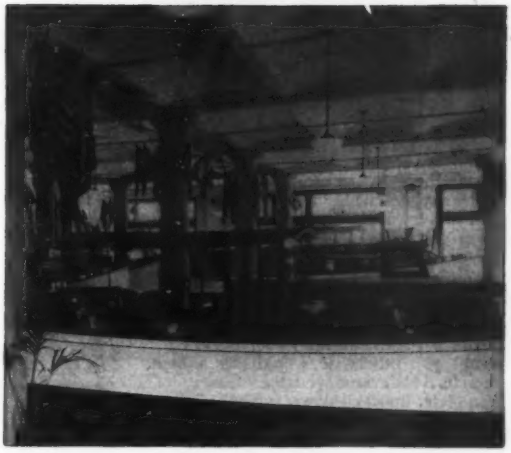
If You Would Know the Newest in Boats and Motors

VISIT THIS SHOWROOM!

THE largest permanent boat and motor display in the world both in area and in value is that of Bruns-Kimball & Co., at Fifth Ave. and Fifteenth Street, New York City.

Most interesting of this gigantic display are the Richardson Cruisabouts. These jaunty cruisers, 29 feet long, 8′ 10″ wide and 2′ 4″ draft, are built with three cabin arrangements—a single cabin day and cruising boat, a double cabin boat with berths for six (two of which are in a stateroom at the stern) and a play or party boat with a big cockpit, a small cabin and an 18 mile speed.

Inspect these popular priced, quality built Cruisabouts at your earliest opportunity, select the Cruisabout best suited to your needs and this summer sail away from the dust, din and danger of motor traffic.



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You save 2/3ds the usual cost by the Brooks Plan. You keep for yourself the profit you otherwise would pay a boat builder. We send you the "Champion" complete, knocked-down for only $55.50. You fit it together in your spare time from easily followed instructions. You needn't be a carpenter to do it either. Thousands of amateurs have assembled Brooks boats. It's so easy you'll wonder why you didn't do it sooner.

Send 10c for catalog showing the "Champion" and 54 different Brooks models, cruisers, sailboats, runabouts, speedsters or most any craft your fancy desires. Write now enclosing 10c so you can enjoy your boat all next summer.

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THE BROOKS PLAN SAVES YOU 2/3ds THE USUAL COST ON ANY BOAT YOU WANT.

Cruiser

Sail Boat

Runabout

Speedster

GIVE THE ENGINE ITS DUE

(*Continued from page* 168)

IGNITION

Ignition troubles are the most numerous the gasoline motor is subject to, and the seasonal overhauling would not be complete unless this part of the equipment was gone over thoroughly. Renew all wires which are defective, particularly the high tension wiring; clean and resurface all contacts, even in the switches; clean and adjust all spark plugs, renewing any which are dirty or show traces of chipped or cracked porcelains, setting the firing points at .031, which is the correct gap for most motors; clean and adjust all timers or distributors according to the manufacturer's instructions, dressing contact points to a clean and square surface and adjusting to the required clearance, generally from .008 to .015, and renew any defective parts, such as cracked distributor heads, weak springs, etc. With generators, magnetos or starters, give a general cleaning, smooth up commutator, renew or adjust brushes, and clean up all contacts; any other repairs, such as turning down commutator, undercutting mica, repairs to defective wiring on the windings, etc., should be taken care of at some electrical shop or shipped to the manufacturer. Storage batteries should be removed from the boat and taken home to run the radio, or sent to a shop to be charged and stored until spring, in order to prevent them from getting weak and freezing, which will ruin the battery. Dry cells, unless they can be used at home on the door bell, can be left on board for whatever use you may make of them, or they can be thrown away, as they will be practically worthless in the spring.

As all the necessary work on this assembly has been taken care of, assemble everything in its proper place, checking up on the ignition timing so that you will set it correctly. An approximate setting for medium speed engines is to set No. 1 cylinder with the piston at exactly the center of its firing stroke, set the timer or distributor so that the rotor is pointing to the center of the contact having the spark plug wire leading to No. 1 cylinder, while the spark lever on the quadrant is at the center of its travel, and then tighten the set screws locking the timer or distributor in place, which will give you a setting within one tooth of the correct timing. After the boat is overboard and the motor running, the set screw holding the timer or distributor can be loosened and the distributor set so that its full advance is at a position just short of where the motor is knocking at full speed.

WATER PUMP AND PIPING

There are three types of pumps used on marine engines, gear, rotary and plunger. The gear type predominates, particularly in the higher speed models, while quite a number of the plunger types are used in the heavy duty motors, particularly in motors having much silt or sand in suspension, which has a tendency to ruin the gear or rotary types in a few hours' operating. Plunger pumps should be overhauled each season, being rebored and a new plunger made, meanwhile reaming the packing gland to the new diameter, after which new packing is used and the check valves examined for renewal. If your plunger pump, however, is in good condition, just renew the packing and look over the check valves carefully. Rotary pumps should be repacked and new vanes installed if necessary. Gear pumps should be looked over carefully. Worn gears should be replaced and the glands repacked with new material. The first place wear seems to make itself evident in the gear pump is end motion of the gears and wear of the pump housing. The illustration shows how such wear can be repaired without using new gears. The metal filler should be of bronze. Another method is to file down on the housing until the end plate fits snugly to the gears, which method must be used even when using new gears. Repairing with new gears and filing the housing until they are a neat but not dragging fit is the most satisfactory method and the most lasting.

Look over all the piping and fittings carefully, replacing any which are rusty, defective or damaged. Repack any valves and renew all hose connections. When putting back into place, make up all joints with white lead. After everything is in place, shine up all the brass and enamel or the galvanized piping and fittings, which gives the motor a much neater appearance. It might be well, while working on the water piping system, to consider controlling the operating temperature of the motor by by-passing some of the hot over-flow water back through a manually operated valve to the intake of the water pump. The amount of hot water returned to the fresh cooling water can be varied to suit the conditions; however, if the water leaving the jackets is kept at 160 degrees, the operating efficiency will be raised considerably, both in fuel consumption and power. Such a by-pass water system is simple to lay out and easy as well as cheap to install. Think it over.

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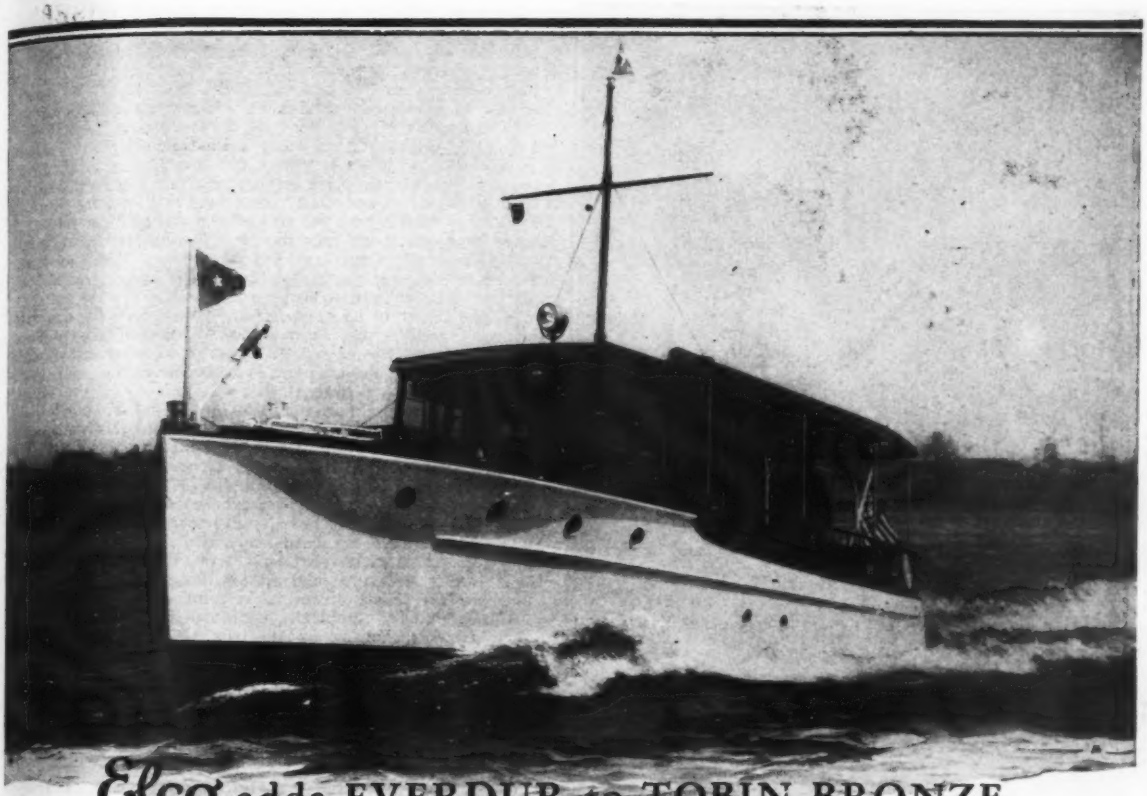

Elco adds EVERDUR to TOBIN BRONZE

as Standard Equipment on *All Models*

ANNOUNCEMENT that The Elco Works, one of the oldest, largest and best known manufacturers of standardized cruisers, have selected EVERDUR for fastenings on all six of their famous models, is significant. They state:

"After subjecting it to thorough tests, we have selected EVERDUR for fastenings on all of our models because we are convinced that it is the most satisfactory material available for the purpose. The great strength, toughness and corrosion-resistance of this metal offer an extra margin of safety that justifies its higher cost.

"TOBIN BRONZE Shafting also is standard equipment on Elco Cruisers and has been for many years."

The American Brass Company manufactures EVERDUR and TOBIN BRONZE in sheets, wire, tubes and rods, including turned and straightened shafting. Leading fabricators are prepared to furnish EVERDUR screws, bolts, nuts, castings and fittings.

The trade-marks TOBIN BRONZE and EVERDUR are registered in the United States and foreign countries.

THE AMERICAN BRASS COMPANY
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Electric Light *aplenty*—

also electrical energy for pumps, fans, anchor hoists, electric tools—Homelite Generator sets for boat and camp—small enough for 30-footers, big enough for 70's.

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F.O.B. Port Chester, N. Y. Including generator, battery and switchbox complete.

Generator stows in 14"x 21"x21", weighs but 110 lbs. Storage battery provides 2500 watt hour reserve capacity.

Use Homelite on board or at camp and have all the electrical comforts of home.

HOMELITE

HOMELITE CORPORATION **Port Chester, N. Y.**

3252

FLEETWING'S STOCK CRUISERS

Five stock cruisers, ranging from 28 to 55 feet in length, are being presented in the 1930 line of the Fleetwing Yacht and Shipbuilding Corp. In addition to the stock boats, the company is designing and building sailboats and powerboats up to 200 feet.

"The Fleetwing policy this year, as in the past," said President Frank V. Borick, "is to build a fundamentally safe and seaworthy ship, with ample power and speed, plus the beauty and conveniences that properly belong with yachting in this day and age. Staunchness and safety come first in Fleetwing design, for my thirty years in both the professional and amateur sides of the sport have taught me even the most careful yachtsman is liable to be subjected to an occasional emergency. The place to meet the emergencies of yachting is in the designing room and shipyard; not at sea in a sudden storm."

As the center of its sales activities, the Fleetwing corporation has constructed a huge showroom at 153rd treet and the Hudson River, almost large enough to house a complete display of the entire line. This display room is accessible to the public by subway, motor car, and by boat.

The smallest yacht in the 1930 line is the Fleetwing Junior, a 28-footer with complete sailing equipment. Although smooth-sided and having a beam of 8 feet-5 inches, the Fleetwing Junior has the shallow draft (2 feet-4½ inches), the speed lines, and the seaworthiness of the seaskiff type from which it originally was adapted. With a 72 h.p., 6-cylinder Gray engine, the Fleetwing Junior is good for 14 miles an hour. Due to the wide beam, unusual roominess has been made available in the cockpit and the trunk cabin. The boat has berths for four, a galley with a Prestolite gas stove and an ice box, and a detachable roof over the after half of the cockpit for fishing and sunbathing. Cedar is used for the planks, white oak for the keel and frames, and African mahogany for the trim. Planks are copper-riveted.

The famous Fleetwing Forty is produced this year in Standard and De Luxe models. While numerous improvements have been made in equipment, layout and fittings, the basic spoon-bottom design which enabled a Forty to stand the gaff of the Florida hurricane two years ago and to come in under her own power, is continued. Beam of the 40-footer is 10 feet-6 inches and draft is 3 feet-6 inches. Power from the 115 h.p. Buda motor drives the vessel at a cruising speed of 14 miles an hour. With the 175 h.p. Fleetwing-Peerless motor, the Forty attains a speed of approximately 20 miles an hour. Comfort and privacy for the owner, guests and a paid hand are assured by placing the bridge deck and engine room, including the hand's quarters, between the two large cabins. Including the hand, the boat has sleeping arrangements for seven. Features include the large and completely equipped galley, the one-man operating control and an open after deck.

Visitors to the New York Motor Boat Show beheld the first model of the sleek, black Fleetwing Fifty to be built as a stock cruiser; although the custom division of the company had previously produced several 50-footers from plans practically identical. The Fifty contains a long list of features, many of which are innovations.

The Fifty, has a 12-foot-6 inch beam and draws 3 feet-6 inches. Power is supplied by two 5 by 7, Fleetwing-Peerless 175 h.p. motors; giving the Fifty a cruising speed of 20 miles an hour. A new Duplex control makes the boat as easy to handle as a much smaller ship. In addition to quarters for a crew of two, the spacious double cabins have berths for six or eight persons. Besides three toilets, a shower bath is provided with hot and cold fresh and salt water. Standard specifications include 1½ k.w., 32 volt electric generating system with forced ventilation throughout the boat, including bilges, changing the air every 3½ minutes; an electric refrigerator; 4-burner Shipmate stove in the main galley, wtih a small stove in the crew's quarters so that the hands can get out early in the morning without disturbing the late-sleeping owner and guests. Fastenings and underwater hardware are of Everdur, a non-corrosive metal developed by the American Brass Company for salt water use. Interior hardware is nickel silver in brush finish. Frames and keel are live Connecticut oak; planks are of Peruvian mahogany and trim is of Peruvian mahogany with eggshell finish.

Many of the features and specifications of the Fleetwing Fifty are duplicated on the Fifty-five, which has a beam of 13 feet-6 inches, and draws 3 feet-6 inchees. The Fifty-five is powered with two gear-reduction Buda motors, each developing 125 h.p. and giving a speed of 15 miles an hour. Provision is made for three staterooms besides quarters for a crew of two to four men, including three toilets and one full size bath.

"With a line of stock boats ranging from 28 feet to 55 feet, and with a custom division building vessels up to 200 feet," said Mr. Borick, "the Fleetwing corporation is in a position to serve the needs of every class of yachtsman. The interest shown in our 1930 line since the Motor Boat Show leads us to anticipate a year of active business."

Advertising index will be found on 3rd last page

Safe in the mighty grip *of* KUHLS

There's real satisfaction in caulking seams with Kuhls — and then confidently forgetting them! Seams caulked with this famous elastic composition STAY caulked for years. Time and the elements belabor your craft in vain when held with the mighty grip of Kuhls.

Permanent elasticity, freedom from a brittle hard set, ease of application, lasting protection, five colors . . . white, black, gray, yellow, mahogany . . . to blend with the finish of your boat. These are features that have served to anchor Kuhls ever more firmly in the marine industry.

N° 1 FOR DECKS
N° 2 FOR HULLS
N° 3 FOR LAYING CANVAS

H. B. FRED KUHLS

e-l-a-s-t-i-c
seam composition

65th street & 3rd avenue
brooklyn, n. y.

Sole Manufacturers since 1889

(*Continued from page 59*)

through bolted to the keel and frames. The construction should be nicely fitted here, notching the floor timbers over the battens, and keel; and notching the bearers over the floor timbers. There is no use in this type boat to put in beds that extend for any great distance fore and aft. So long as the beds are well fastened and the keel and planking is secured to the bulkheads, there will be plenty of fore and aft strength. Figure 4 gives the details for making and forming the bed for the engine.

The seats, flooring, and lazy backs will be made from 5/16 inch plywood with spruce nailing pieces. By all means arrange to have the cushions so they can be readily removed because boats are at times wet things and it will be handy to be able to take the cushions home to dry.

The deck will be made from 5/16 inch white cedar and in widths about 7 inches wide fitting battens behind the seams. There should be a

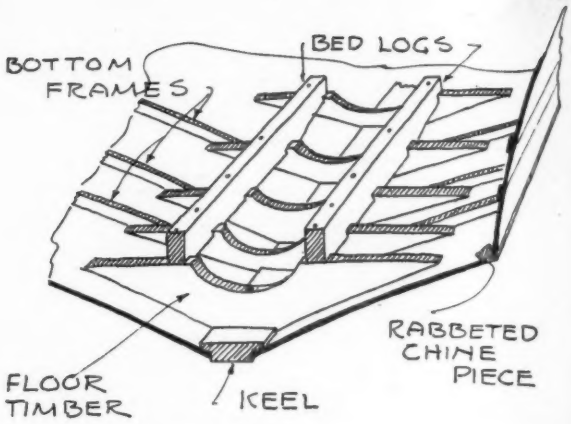


Figure 4. Details of engine bed, floor timbers and keel

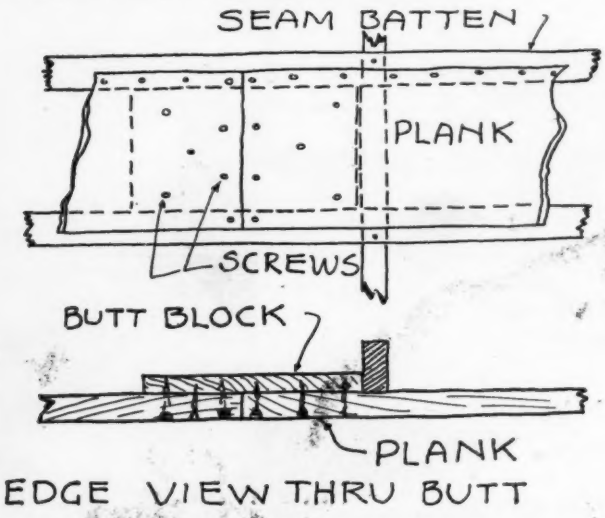


Figure 5. Details of butt blocks showing method of fastenings, etc.

plankshеer all around the deck with a king plank through the center. The rest of the deck will run fore and aft. It looks well to insert a narrow strip of mahogany between the plankshеer and deck, and the king plank and deck. This should be about ⅛ inch wide and of course the same thickness as the deck. Use brass screws for fastenings being careful to space these evenly and drive them so the heads will come flush with the surface.

The hatch covers over the engine will be made in the same manner as the deck. It will have 1-1/6 by 2 inch brass stripping around its edges to prevent leakage. The hinges should be of the T type with nice long legs.

The coamings will be made from ½ inch mahogany and will have to be steam bent. Fasten with screws leaving the heads to show same as in the deck. The rest of the trim will be mahogany using light material of small dimensions as shown on the plans.

Now I seem to have covered the principal items that must go into the construction of a small boat of this kind. Always a lot has to be left to the ingenuity of the builder and his common sense, without these it is not likely that anyone will attempt to build a boat, and I should not advise it. Undoubtedly the work will go smoother if blue prints are secured of Peter.

OUTBOARD BUSINESS BOOMS

A convincing indication of what may be expected in the outboard industry this year is the fact that the Marine Sales and Service Company, Johnson distributors at Wilmington, California, have increased their sales of Johnson motors and boats 218 per cent. during a four and a half month period over the same period last year.

Here is a record of the increases by months: October 36.7%; November, 238.1%; December, 490%; January, 262.9%, and February (first half), 378.4%.

In making this report, Paul Hawk, manager of this firm, stated that "Of course, these months constitute only a small part of our business for the year, but still the tremendous increase over last year is an indication to us that we may expect a wonderful business in 1930."

MOTOR BOATING'S DESIGNS

Amateur boat builders who are considering the construction of any of the boat designs for which have been published in MoToR BoatinG will find that the larger blue print copies of the designer's drawings will help greatly in the layout and construction of the boat. These can be secured at moderate cost and an inquiry to the Editor's office of MoToR BoatinG, 959 Eighth Avenue, will inform you as to the prices of the drawings. Many of the earlier designs have been reprinted in book form and a descriptive circular covering all of these can be had on request.

A HANDBOOK FOR BOATMEN

Old salt or fresh water mariner, yachtsman or outboard enthusiast—you'll find a wealth of information on almost every phase of boating in the new catalog recently published by Wilcox, Crittenden & Co., Inc., of Middletown, Conn., the largest manufacturers of marine hardware in America.

The new book is vastly more than a catalog. While it tells about the complete line of marine hardware for which the Middletown concern is justly famous, the book is a mine of information to boating enthusiasts.

If you want to know more about proper methods of anchoring, for example, you'll find ten pages of most practical and helpful information in the Wilcox-Crittenden catalog, with illustrations on correct anchoring procedure under all sorts of conditions.

When in doubt on any of the rules of the road at sea, again the catalog gives you a wealth of information. Then there are many pages devoted to helpful information on boxing the compass, charts, signals, buoys and almost anything a boatman may need to know.

The new Wilcox-Crittenden catalog is a veritable boatman's bible. And you will find in its pages many items of marine hardware and fittings to better equip your boat.

Readers may obtain a free copy of the new catalog by writing to Wilcox, Crittenden & Co., Inc., Middletown, Conn.

WHEELER PLAYMATES

"Good-bye Winter"

33-foot Playmate—36-foot Model (above)

"I'm getting a New Playmate this Spring"

Skates, skis, mufflers, overcoats, red flannels—all packed away. Winter has waved a last farewell and started her trek northward. *Spring is here!* Sparkling waters smile and flirt with you—irresistible and alluring. Warm-weather sports are in order. AND, *new* "PLAYMATES" await you; *playmates* in every sense of the term; staunch, steady and true—and always companionable!

As you look forward to the wonderful golden days and silver nights ahead of you, your mind turns automatically to the subject of boats. You've got to have one; you can't go through another season without one. And the boat for you is unquestionably a WHEELER "PLAYMATE"—built with the infinite care bestowed only by those who know and love the water.

You have your choice of fifteen brand new models, designed and constructed to meet your every demand. Swift, strong and absolutely seaworthy, they are ready to serve you as fishing or general sport boats, speedy commuters or express cruisers.

Let us send you literature about the Wheeler Line—or, better still, come down to our shipyard and see these boats being built, see what materials go into their making and witness a demonstration of superior craftsmanship.

Ask for Catalog "A"

STANDARD MODELS

47' x 12'	—New, Custom Design Commuter, Sedan and Double Cabin. Single and Twin Screw
39'11" x 11'	—Single, Sedan and Double Cabin Models
36' x 10'	—Single, Sedan and Double Cabin Models
33' x 9'6"	—Single and Double Cabin and Sport Models
29' x 9'3"	—Single and Short Cabin and Sedan Models
26' x 8'2"	—Single and Short Cabin and Sedan Models
22' x 7'	—Sedan and Open Models

$1,950—$23,500

WHEELER SHIPYARD

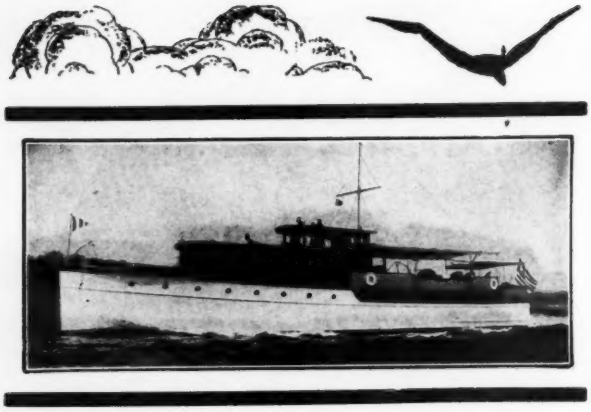
Foot Harway Avenue, Brooklyn, New York

Tel.: MAYflower 7600

WHEELER SHIPYARD

Distribution Points:

Boston—Stearns Marine Service Co., 19 Central St.
Syracuse—C. R. Brown, James St. & Oswego Blvd.
Houston—Tracy Parks, 2nd Nat'l Bank Bldg.
Miami—Couzens & Daly, 29 Hotel McAllister Arcade
Detroit—Detroit Marine Garage, East Jefferson Ave.



Ready for Inspection

magnificent

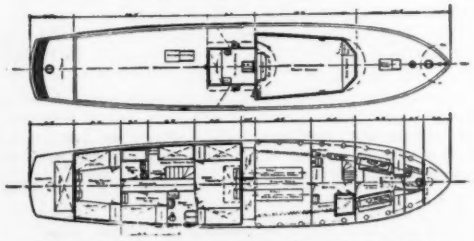
Standardized 77-foot Cruiser

IN THE history of American ship-building, no boat has created more enthusiasm and interest than our new Standardized 77-foot Cruiser, constructed originally to individual specifications. It remains essentially a custom-built boat, the same precision and scrupulous attention to detail being exercised as when the original was constructed. It is designed and equipped to meet each customer's personal desires.

SPECIFICATIONS

16-foot Beam
Double-planked Hull
Decks of Teak
House of Mahogany
Two Double Staterooms
Two Single Staterooms
Two Bathrooms
Combination Dining and Living Room
Large Deck House
Captain's Stateroom adjoining Pilot House
Quarters forward for Crew of Four
Galley running full width of boat
Frigidaire Ice Machine
Decatur Pressure Water System
110-volt Electric Generator
Bilge Pump
Electric Windlass
15-foot Tender
12-foot Dinghy
Unusual Appointments and Refinements
Powered with either Gasoline or Diesel Motor

In all kinds of weather conditions this sturdy, rugged Cruiser is dependable and seaworthy. In addition, it possesses a beauty and grace found only in yachts of much larger size. Two of these Cruisers are now ready for Spring delivery. Order should be placed immediately to avoid delay. Write for complete details, exterior and interior views, specifications, prices, etc.



For over thirty years we have been constructing to individual specifications some of the finest yachts seen in American waters. Our Custom-built Department is ready at all times to submit plans and specifications covering your individual ideas.

The New York Yacht, Launch & Engine Co.

Morris Heights, New York City

USE YOUR INSTRUMENTS

(*Continued from page* 55)

your oil and be sure you are Safe.

Barometer—Set your Barometer each day and observe its action. Any sudden change indicates a storm coming and you will always have ample notice to get snuggled down and ready.

Clock—An accurate timepiece is essential to navigation, and it is now possible to get clocks built for boat work which have departure hands incorporated so that you can set at a mark and read your elapsed time without recording each mark as has been customary. A marine clock must be moisture proof and built for the work.

Fuel Level Gauge is a gentle reminder that no boat will run without gasoline, and even if you run an auxiliary you might need some to come home with if the wind died out.

Fuel Flow Meter—If you are to operate your boat economically this instrument will prove valuable as it shows at all times your rate of fuel consumption, and any marked change will indicate that carburetor adjustment needs checking.

Hand Fuel Pump—Any mechanical pump may get out of order, and a hand pump in the line will bring you home under your own power instead of that ignominious position on the end of a tow line.

Fuel Strainer—Any gasoline tank is liable to accumulate water from condensation, and no matter how careful you are, some dirt will get in. The safety of your boat requires regular cleaning of the fuel strainer as the pressure of water or dirt in the carburetor may clog your jets and stop your engine just when you want it most.

Oil Pressure Gauge indicates the pressure of the oil being fed to your bearings. When you buy your boat or engine make a note of the pressure which it should show and watch it. If it varies, showing a range of pressures, you probably have too little oil in your crankcase. Stop and put some in from the spare can you have in the locker. If the pressure starts at the proper point and then drops, your engine is overheating, which may mean you forgot to open the water intake valve or that some obstruction has clogged your strainer. If your pressure starts lower each time you start the engine you have dilution of your oil from too much choking of the carburetor and the oil should be changed on the next stop. Remember oil is essential to your engine and is cheaper than bearings—or a wrecked engine and a tow home.

Thermometer is an indicator of the condition of your circulation system, and will if properly handled enable you to save gasoline and get the maximum efficiency from your engine. The temperature should be held as near 140 degrees Fahrenheit as possible, as it has been shown that temperatures both above and below that are inefficient.

Ammeter shows the charging rate on your storage battery. Don't run above the rate recommended by the engine manufacturer, and remember you can spoil your storage battery by overcharging. Note ammeter when you go aboard, and if it shows discharge before you turn your switch have someone find the short circuit which is causing it.

In conclusion use the instruments and study your boat. It's fun and the fact that you always go and come back gives you a pride of ownership in that boat of yours.

A PROGRESSIVE BOAT PLANT

(*Continued from page* 54)

son went into the boat building business himself. He had his own ideas on just what the sportsman-yachtsman was seeking. Five years ago he brought out the first of the Seagull models—boats that had sleek lines, plenty of dash and speed with accommodations for cruising included.

A trip through his plant reveals the fruits of this vision.

Large brick, steel, glass, and concrete structures rise from what a year ago were marshes. Hydraulic pumps filled in the ground, providing a perfect site for a boat plant on the St. Joe River only a quarter of a mile from Lake Michigan. Here is an unexcelled proving ground to serve every boating condition which it is possible to encounter. Smooth water and the menacing breakers of rough Lake Michigan provide all the essentials for correctness of design.

Unhurried production methods, the use of modern machinery, up-to-date tools in the hands of experinced workmen tell a vivid story of deserved success. Here is a plant that was built on vision—with the practical, hard-headed business-like efficiency that spells real achievement—with a young, up and coming man at the helm to guide its destinies.

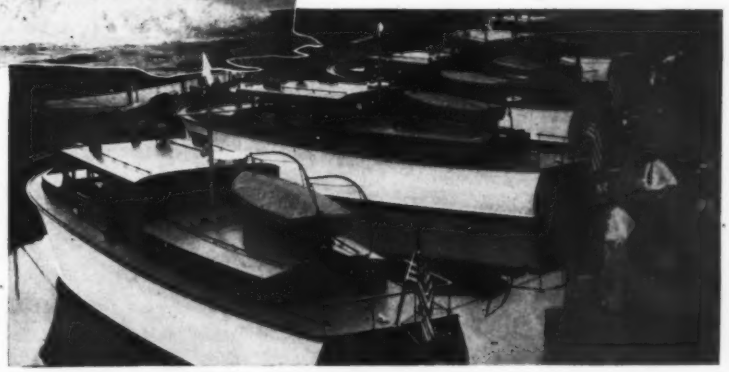
Advertising index will be found on 3rd last page

Where Quality Is Paramount

Woolsey's

Products Are Used Exclusively

Fairform Flyers, 45 and 54 footers, built by the Huckins Yacht Corp. of Jacksonville, Florida, are protected from keel to mast truck with Woolsey's superior products.



Above: A 45-foot Fairform Flyer clipping off the knots with its smooth Woolsey's Copper "Best" bottom.

Right: A fleet of Woolsey protected Fairform Flyers, awaiting delivery to their owners.

SINCE 1853 *Woolsey's Paints and Varnishes have been widely used on all types of craft sailing the seven seas. Today Woolsey's products are used by America's leading builders of standard and custom built boats. If you want the finest in paints and varnishes, insist on Woolsey's and you will save money in the long run.*

WOOLSEY'S YACHT WHITE

For lasting quality, whiteness, and durability Woolsey's Yacht White is unexcelled. Is made in either gloss, semi-gloss or flat finish. It will not crack, blister nor peel. It leaves an ideal surface for repainting.

COPPER "BEST" PAINT

For a smooth sailing bottom and absolute protection against fouling by seaweed, barnacles or boring teredo worm you can use nothing better than Woolsey's copper "Best" Paint.

TUNGSPAR VARNISH

This specially prepared waterproof marine varnish will not turn white. It is elastic and maintains high and lasting lustre. Unaffected by weather conditions. Tungspar is a quality varnish for particular people.

Other Woolsey Protective Coatings include—Deck Paints, Glisto White Enamel, Engine Enamels and Iron and Steel Bottom compositions.

Stocks in All Ports

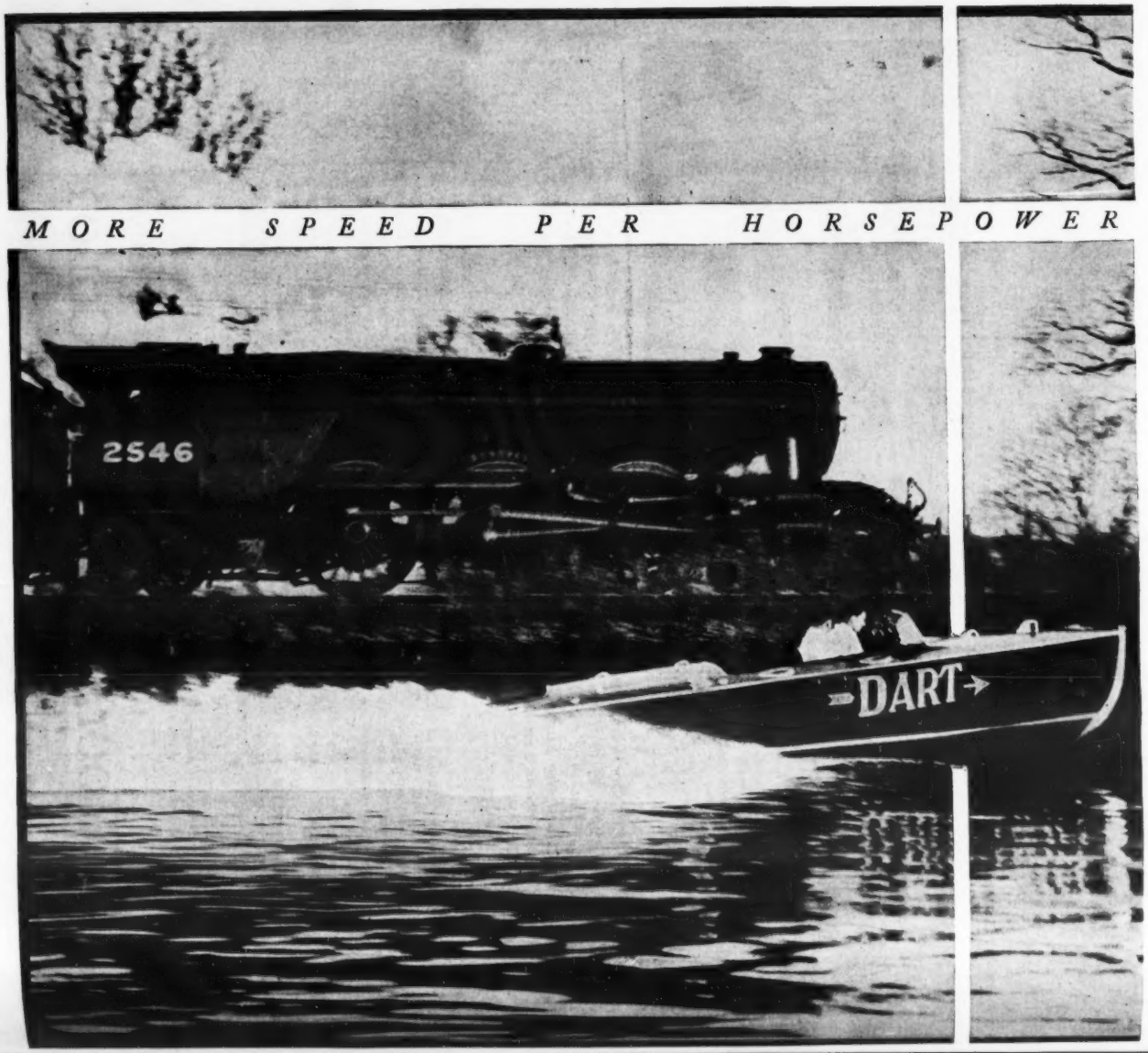
If your dealer cannot supply you, write us.

C. A. WOOLSEY PAINT & COLOR CO.

JERSEY CITY, NEW JERSEY

TAMPA, FLORIDA SAN FRANCISCO, CALIFORNIA HOUSTON, TEXAS

Advertising index will be found on 3rd last page



A View of the famous race between a Dart Boat and the Flying Scotsman on the River Ouse . . .

an event which has received international prominence in the press and motion pictures.

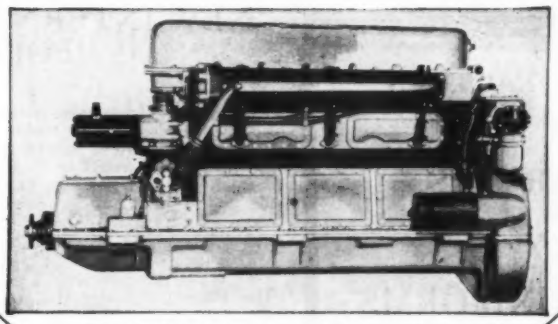
Combined with the great speed of Dart Boats is a seaworthiness unequalled in any craft of their type . . . The level planing angle of the Dart gives a fine, clean entrance which eliminates pounding and throws a flat spray well away from the boat.

There are four Dart models . . . 18½-foot, 22½-foot, 26-foot and 30-foot. Open or closed . . . Write at once for specification sheets, construction details and prices. Mention the model in which you are most interested.

DART

DART BOATS, INC.
TOLEDO, OHIO

New York Branch . . 17 E. 42nd St.



The double-clutch forward drive of Joes Gears is fully protected by patents.

ON THE KERMATH 225 H. P.

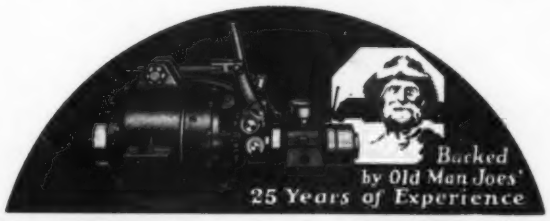
Joes Gear is standard equipment on this giant Kermath 225 h. p. marine engine, "America's Ace of Action," and on all the other big new Kermath models.

Since adopting Joes, their Mr. Geo. N. Hickey, Chief Engineer, writes us: "our gear performance has been excellent. We hope you will never waver from your policy of ***quality of material and workmanship.***"

We assure Mr. Hickey, and all others who maintain nothing but the highest standards of production, that "Joes quality" can prove an unbroken lineage back to the day the first gear left the plant. Perhaps it is this sturdy genealogy that has made Joes the choice of more than 52 engine builders today!

Gear Bulletin on request
Dealers, write for discounts

THE SNOW & PETRELLI MFG. CO., 19 Fox St., New Haven, Conn.



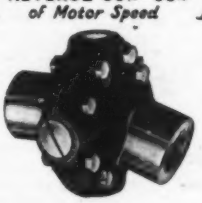
JOES FAMOUS REVERSE GEARS

REVERSE 80%-88% of Motor Speed

Now Is the Time to Stock Up with

HARTMANN UNIVERSAL JOINTS

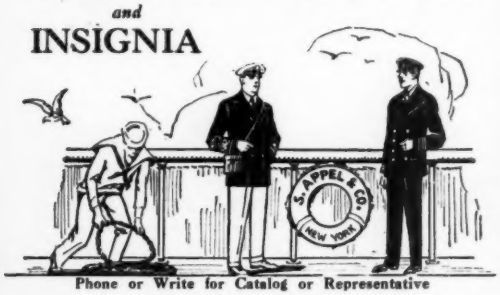
No propeller shaft does its best without a Hartmann Universal Joint. Anticipating an increased demand, we are ready with a complete stock of all sizes for quick shipment. Order from this price list or write for descriptive circular. (Discounts to the trade).



Size	Max. Bore	Length	Weight	Swing	Price
J	1¼	5¼	7 lbs.	4¾	$10.00
L	1½	7	14 lbs.	5½	18.00
M	2	8	20 lbs.	6⅞	25.00

QUALITY — SERVICE — CORRECTNESS

THESE THREE FACTORS
have established us
as
HEADQUARTERS
for
CORRECT
YACHTING UNIFORMS
and
INSIGNIA



Phone or Write for Catalog or Representative

S. APPEL & CO.
14 to 18 FULTON ST.
NEW YORK CITY
Tel: JOHN 5382 to 5389

Serving the Yachtsman Since 1856

PROTECT YOUR BOAT
with the SAF-AIR Fender

Outlasts 12 Ordinary Ones—
CLEAN — DURABLE — RESILIENT

No more cork stained hull, no rope grease. "Air-Filled" Fender gently pushes boat away from dock—no bumping. Half weight of ordinary fender. Buoyant. Built like a bus tire. Inflate once a year. Encased with heavy duck.

Two sizes: 6" x 22" (boats up to 50 ft.), $15.00; 8" x 23" (boats up to 100 ft.), $20.00. Larger made to order. Many giving perfect service after three years' use. Guaranteed. If your dealer cannot supply you, order from factory. Write today for folder, "How to Use Fenders."

Appliance Manufacturing Co.
5580 Greenway Avenue
Detroit, Michigan

NEW INTERNATIONAL CLASS POPULAR

(*Continued from page* 56)

there is a point beyond which no contestant can go in increasing the compression of his motor without effecting its efficiency.

It was, therefore, agreed that o specifications with respect to compression would be incorporated in the rules but that uniform fuel would be supplied to all contestants by the committee and a gentleman's agreement between the various motor manufacturers not to supply special heads to automatically control this possible variable.

The fuel which will be specified by the committee will be commercial gasoline with a content of 5 c.c. Ethyl per gallon. The Race Committee will take samples from each tank immediately before and after the race as a safeguard against the injection of additional Ethyl or other dope after the boat had crossed the starting line.

As to the question of placing limitations on valve diameters and lifts, piston clearances, etc., it is agreed that no specific mention of these specifications were necessary in the rules, the specifications to be submitted to the Race Committee by each motor manufacturer automatically controlling these details.

The Committee was unanimous in their opinion that the 135-horse power limitations named in the original rules should be eliminated in that none of the engine manufacturers could honestly swear to the fact that none of their motors would develop in excess of this amount of power under any conditions. They agreed that as their motors now stood 135-horsepower was the limit anyone of them would deliver but at the same time there was no predicting how much more power could eventually be obtained from 335 cubic inches in an entirely orderly fashion.

As to the minimum weight of the various power plants, it was decided that the substitution of aluminum or other light metals not to be found in the stock motors would be automatically prohibited by the specifications which each one of the motor manufacturers would file with the Race Committee which would define the material used in various parts which might be subject to such a change.

It is gratifying to learn of the spirit of co-operation and the good faith on the part of all of the motor manufacturers in striving to hold these classes within reasonable and logical limitations as to power plants.

The manufacturers believe that they have developed their motors to a very high point of efficiency and that any variations in their design which might be undertaken by the individual contestant would serve to reduce rather than increase the efficiency. This being the case each of the manufacturers is anxious that their motors are not unduly tampered with by the individual contestant and that with each of the manufacturers having a representative on the technical committee, provides a short way to rule out one of their own motors which had been altered beyond reason.

MARINE SERVICE IN BOSTON

(*Continued from page* 57)

premises is the excellent demonstration facilities. Customers may inspect the boat that interests them while in the salesroom and then go right down on the float, step into a duplicate model in the water, and there see how it performs under any one of a dozen water conditions to be found in Boston Harbor waters.

Ample parking space for cars is also provided. To those familiar with down-town Boston's scarcity of parking space along the curb this provision will be appreciated.

Let us go down on the landing float. A boat is coming up the channel. In a minute she looms up beside the float. Uniformed attendants with caps displaying the Noyes Marine insignia salute the owner, take bow and stern lines, and make the boat fast. Greeted with a cheery "Good morning," the owner is asked if he needs gas, oil, and water or additional service. At the head of a stairway leading to the street exit a waiting taxi will whisk him to the office unless he prefers to walk the short distance.

In the meantime the boat's decks are flushed off with a hose to remove salt spray, she is tidied, fueled, supplied with oil or other desired requisites and moored bow and stern with a line just away from the dock. At the appointed time the boat will be at the float awaiting her owner, motors running and ready for the homeward journey. This is but ordinary routine.

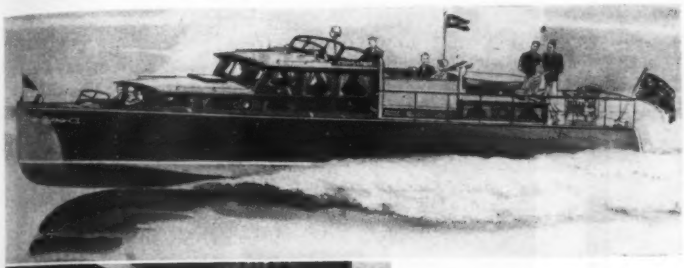
If any mechanical service is required, here is where the boat owner experiences the true value of Noyes Marine service. Instead of the customary delay incidental to hauling out on a marine railway the boat is promptly nosed into a well 12 feet long and extending 20 feet into the shop. Two powerful electrically operated cranes traveling on an overhead monorail system are made fast to the boat, lift her straight up out of the water, as shown in the photograph, and deposit her easily on

(*Continued on page* 186)

Nationally Known Boat Builders are Rapidly Adopting

CROSLEY RADIO

as Standard Equipment for Motor Boats, Cruisers and Yachts



The illustration to the left shows a Crosley Battery Radio installation in the new Chris-Craft Yacht, Model 123, the finest Chris-Craft ever launched and the flagship of the Chris-Craft fleet. Crosley Battery Radio is *standard equipment* in this magnificent example of fine boat construction selling for $35,000. It was only after thorough investigation and tests that the manufacturers adopted Crosley as standard equipment for this, their finest, most costly, and proudest work.

An ever increasing number of nationally known boat builders are proving for themselves that Crosley Battery Radio delivers a most satisfactory degree of performance when installed in water craft of any kind. When used in power driven craft it is insulated from all motor noises and is free from disturbance by the electrical system.

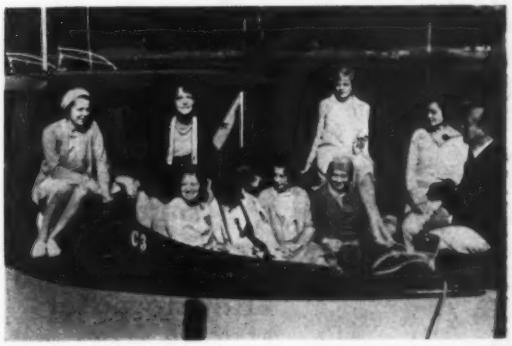
At the last New York show there were eighteen boat builders of national reputation who displayed models equipped with Crosley Battery Radio either as standard equipment or as an added accessory.

The pleasure of cruising can be enhanced greatly by Crosley Battery Radio, either alone or in combination with a phonograph. It can be installed in the craft you now have or can be specified to be built into any new craft you may purchase.

Your Crosley dealer can supply you with full information and prices as can any boat builder with whom you may be negotiating.

Frank P. Huckins, President, Huckins Yacht Corporation, Jacksonville, Fla., says: "The first of the 1930 Fairform Flyers, equipped as standard with Crosley Radio and Phonograph was launched two days ago. Crosley Radio was selected only after careful investigation and we feel that it rounds out an unusually complete equipment for a brilliant craft."

Illustrations to right and left



WESTERN PRICES ON ALL MODELS SLIGHTLY HIGHER

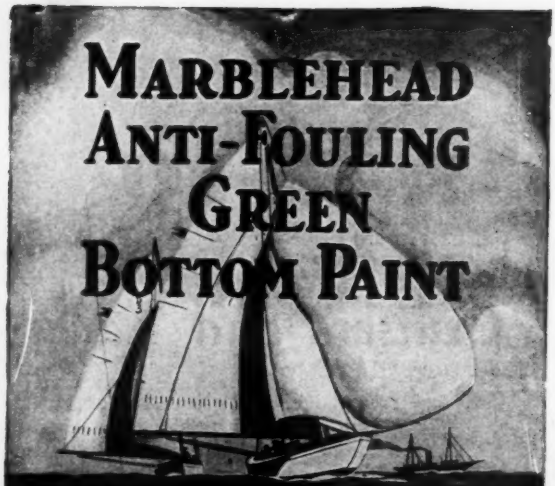
THE CROSLEY RADIO CORPORATION Powel Crosley, Jr., Pres. **CINCINNATI, OHIO**

Home of WLW—*"The Nation's Station"*

You're THERE with a Crosley

CROSLEY RADIO

MARBLEHEAD
ANTI-FOULING
GREEN
BOTTOM PAINT



Saves Its First Cost Many Times Over

because it covers twice the Surface, lasts a long time, and is the most effective Bottom Paint produced.

"The highest grade product that can be used."—JOHN H. WELLS, Inc.
"Gives perfect satisfaction."—THE MATTHEWS COMPANY.
"Will use it exclusively."—HACKER BOAT COMPANY.
"We are satisfied with the results obtained from this remarkable paint."—HENRY J. GIELOW, Inc.
"Unable to find anything that will stand up as your paint does."—GEO. LAWLEY & SON, CORP.

STEARNS-McKAY MFG. CO.
Marblehead, Mass.

Fitting out?

CHECK

Logs
Books
Charts
Sextants
Binoculars
Barometers
Chronometers
Thermometers

REPAIR SPECIALISTS

JOHN BLISS & CO., Inc.
83 Pearl Street, New York City

Catalog upon request

JOHN J. AMORY PASSES ON

The National Association reports with extreme regret the death of John J. Amory, first vice-president of the Association and president of the Consolidated Shipbuilding Corporation of Morris Heights, N. Y. Mr. Amory died unexpectedly on Wednesday, February 26, following an operation. At the annual directors' meeting of the Association on February 20 he had been re-elected first vice-president for the current year, although he could not attend the meeting on account of a heavy cold.

Mr. Amory was 74 years old, having been born in 1856, at Fond-du-Lac, Wis. He attended St. Paul's School in that city and later was graduated from Riverview Military Academy at Poughkeepsie, N. Y. On September 1, 1881, he married Mary Sheppard Hull of Poughkeepsie, who bore him two sons, Eugene H. and Clement G. Amory, who survive him. The first Mrs. Amory died July 27, 1925. In June, 1929, Mr. Amory married Mrs. Thelma Hall Warner, who survives him.

The late John J. Amory of the Consolidated Shipbuilding Corporation

Mr. Amory's first plunge into business was as a railroad clerk in Fond-du-Lac. After a few months at this work he set out for the Pacific Coast, where, at Santa Monica, Calif., and later at Tucson, Ariz., he entered the livery business. He then tried his hand at mining in Tombstone, Ariz., and later was with an express company at Texarkana, Ark. For the next year or so he conducted a hotel at Billings, Mont. Unlike the usual rolling stone of the industrial world, Mr. Amory was gathering valuable experience and business sense with all his varied occupations. His next business location was as secretary and treasurer of the Armstrong Manufacturing Company, in Bridgeport, Conn.

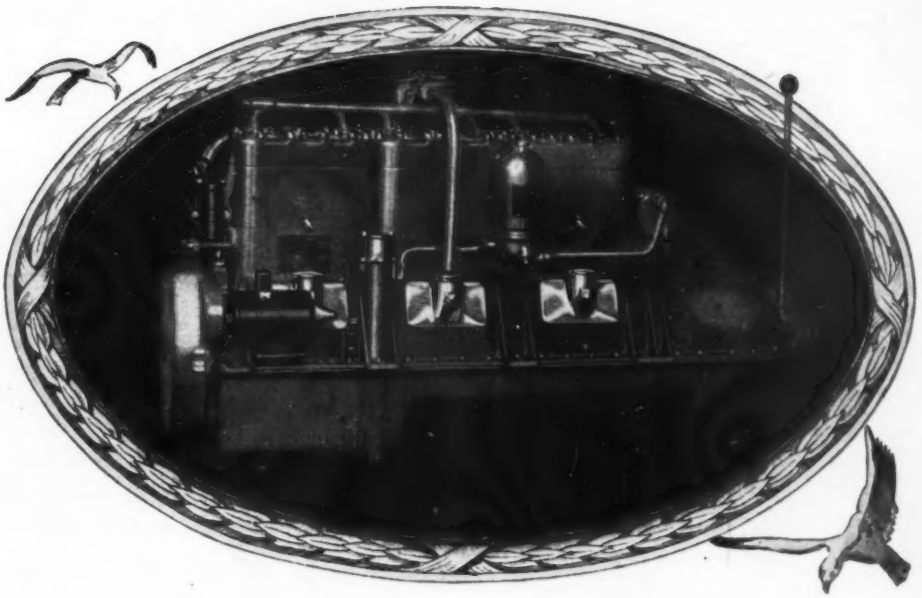
And then, in 1886, he entered the motor boat business in which he was to become such a power and guiding factor.

In that year he became secretary and treasurer of the Gas Engine and Power Company, which was, a little later, combined with Charles L. Seabury and Company, the company being known for many years under the combined names of both concerns. With Mr. Amory as president, the firm's name was changed to Consolidated Shipbuilding Corporation, which, under his steady hand, has grown into one of the largest concerns engaged in the building of motor boats and yachts in the United States.

Mr. Amory's connection with the motor boat world parallels very closely the achievements in the automobile industry of such hardy pioneers as Charles E. Duryea, Elwood Haynes, Alexander Winton, Henry Ford, H. H. Franklin and others. From

(*Continued on page* 186)

Advertising index will be found on 3rd last page



Illustrated is the
SCRIPPS MODEL 162
150 H.P. at 2200 R. P. M.
One of a line of fifteen models 15 to 200 horsepower for high speed and medium duty.

What do you expect of your motor?

POWER and speed in themselves do not constitute performance. That extra mile an hour; that winning of an occasional race; that outdistancing of a neighbor in a friendly brush provide but momentary thrills.

Peace of mind and true comfort spring only from the positive knowledge that your motor is always ready to go when, where, and as you wish.

Power and speed are in every SCRIPPS, but it is the consistent day-in and day-out performance with only the attention deserved by any worthy machine that causes the SCRIPPS to stand preëminent;—performance that is unfailing as it is silent and smooth; performance that in the long run carries you there and back, unconscious of your power plant except through the rhythmic purr of its exhaust.

SCRIPPS Motors are the invariable choice of those who demand *more* of a motor.

SCRIPPS MOTOR COMPANY, 5819 LINCOLN AVENUE, DETROIT, MICH.

SCRIPPS POWERED

The wide acceptance of SCRIPPS Motors is best expressed by the ever growing list of standardized craft offered with SCRIPPS as standard or optional equipment.

BANFIELD
6 Models
CHRIS-CRAFT*
6 Models
CORSAIR "36"
GAR WOOD "40"
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KYLE "43"
MATTHEWS*
MINETT-SHIELDS
NORTH STAR
ROBINSON SEA GULL
Twin Installations
SEA LYON "40"*
STEPHENS
WHEELER "PLAYMATES"*

Foreign
BRITISH POWER BOATS
OSBORNE-CRAFT
(ENGLAND)
CLAUS-CRAFT (GERMANY)
DESPUJOLS (FRANCE)
*Optional

SCRIPPS

· THE MOTOR THAT CROSSED THE ATLANTIC ·

SALES AND SERVICE: NEW YORK, N. Y., Holt Marine Engineering Corporation, 611 West 125th Street—BOSTON, MASS., Noyes Marine Company, 305 East Congress Street—PHILADELPHIA, PA., Marine Equipment & Supply Company, 116 Walnut Street—MIAMI, FLORIDA, J. Frank Knorr, 528 N. W. Seventh Avenue—NEW ORLEANS, LA., Arthur Duvic's Sons, 122 Chartres Street—SEATTLE, WASH., Atlas Engine Company, 69 Columbia Street—WILMINGTON, CAL., Yacht & Motor Sales Corporation.

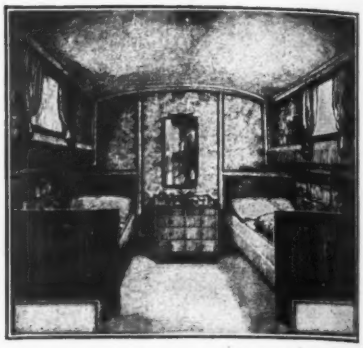
HOLL-CRAFT STEEL YACHTS

of Any Size and Power...

THESE YACHTS are examples of the finest workmanship of master shipbuilders.

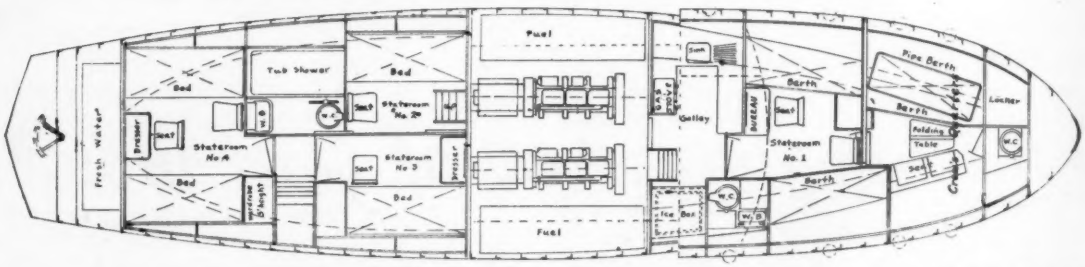
Nowhere in the world will you find boats comparable to these Diesel-powered steel craft. Built to the exacting specifications of Lloyds, after design of the Bremen, advanced naval architecture, speed and seaworthiness are assured.

Careful construction results in extremely low insurance rates . . . low fuel cost . . . absence of danger from gasoline . . . freedom from hull destruction by worms.



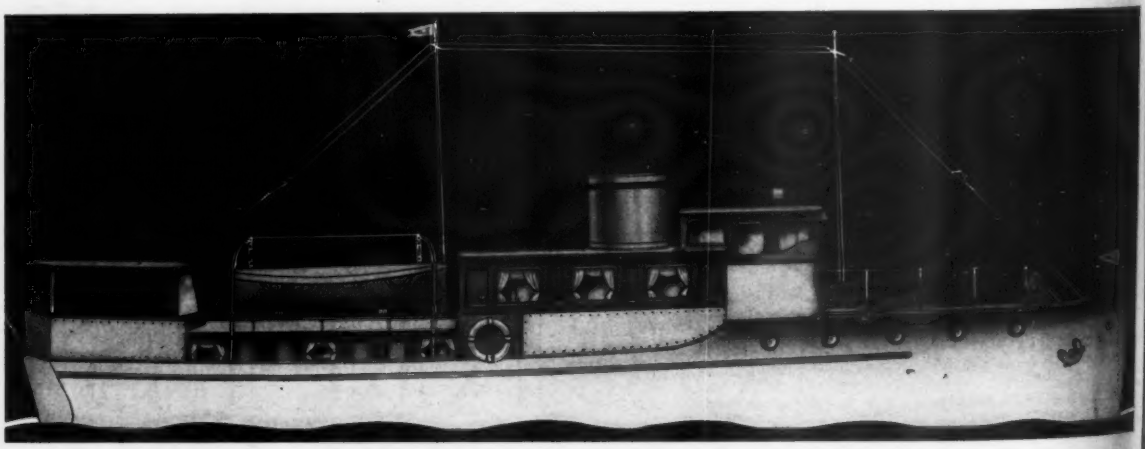
This State Room is furnished with full twin-size removable beds, not ordinary berths. Entire sleeping accommodations provide for ten people comfortably. Typical of the luxury throughout the craft.

Layout of Our 58 ft. Diesel-Powered Steel Cruising Yacht



Accommodates 10 passengers including crew. 4′ 6″ draft: 13′ beam. Displacement 26 tons. Two M. A. N. German Diesel Engines, 140 H.P. Speed 14 miles per hour. Fuel Tanks and Water Tanks in double-bottom compartments, placed in the hull, thus making engine room more spacious; allows also for placing there a 4 K.W. Bolinda Diesel Generator. All-electric Galley, 110 volt wiring. Price approximately $41,500. This price may be modified by eliminations or substitutions of some of the more expensive finish and furnishings.

In this model, as in all other HOLL-CRAFT Yachts, all exterior joiner work above the steel is teakwood, as is also the deck planking. Exterior hardware and all metal trimmings on interior, except on walnut doors, are chromium plated. No varnish, shellac or oil is used in the wood finishing process, yet a lasting and glasslike surface has been obtained which is unaffected by salt water and does not scratch easily. Deck and engine room ceiling insulated with two inches of cork and other heat-resisting materials.



For full particulars concerning HOLL-CRAFT Steel Yachts, address . . .

SHIPBUILDING & MOTOR EQUIPMENT, Ltd.

143 Tremont Street **BOSTON, MASSACHUSETTS**

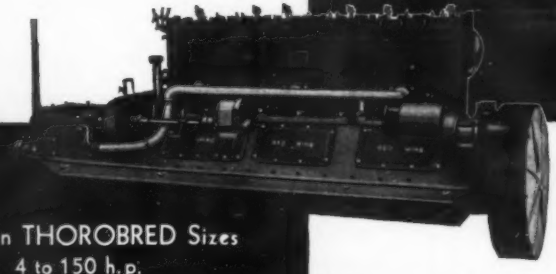
Advertising index will be found on 3rd last page

Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE

A Story it Takes YEARS to Tell··

You won't know the full value of a Red Wing marine motor the first month--or year....You'll appreciate at once its splendid power, smoothness and flexibility. The motor will be a delight from the first. But it is not until you've enjoyed Red Wing power over a period of years that you fully appreciate the wonderful reliability--the rugged endurance and long life that has characterized the Thorobred line for 30 years.

RELIABLE



Nineteen THOROBRED Sizes
4 to 150 h.p.

4 cylinders	
D 10-14 h.p.	2¼" x 4"
AA 18-24 h.p.	3⅛" x 4½"
F 28-36 h.p.	4⅛" x 5"
B 32-40 h.p.	4½" x 5"
BB4 40-50 h.p.	4½" x 6"
BB4 HS 45-70 h.p.	4½" x 6"
Big Chief 50-60 h.p.	5" x 7"
Big Chief Special 75-90 h.p.	5¼" x 7"
6 Cylinders	
Warrior 30-50 h.p.	3½" x 5"
Arrow 40-80 h.p.	3½" x 4½"
Arrow, Jr. HS—35-70 h.p.	3¼" x 4¼"
BB6 MD 60-85 h.p.	4½" x 6"
BB6 HS 85-110 h.p.	4½" x 6"
BB Sp. 6 MD 75-100 h.p.	5" x 6"
BB Sp. 6 HS 100-150 h.p.	5" x 6"
Big Chief Six 90-115 h.p.	5" x 7"
Big Chief Sp. Six 110-150 h.p.	5¼" x 7"
1 and 2 Cylinders	
K 4-5 h.p.	3½" x 4½"
KK 7-8 h.p.	3¼" x 4¼"

There's a Red Wing motor for every type of craft... From 1 to 6 cylinders, 4 to 150 h.p. High speed and medium heavy duty types. Let us recommend the right motor for your boat.

Illustrated is the Big Chief Six, most powerful of the THOROBRED line, and ideal for large cruiser or commercial craft. Two sizes, 5" x 7" and 5¾" x 7", and also furnished in true twin screw pairs. Ruggedly designed with massive 7-bearing crankshaft, pressure oiled throughout and equipped with every approved marine refinement.

WRITE FOR CATALOG

RED WING MOTOR CO.

Red Wing, Minnesota, U. S. A.

EASTERN DISTRIBUTORS

W. H. Moreton Corp., 1043 Commonwealth Ave., Boston
Verrier, Eddy Co., 201 East 12th St., New York City
W. E. Gochenaur Mfg. Co., 631 Arch St., Philadelphia
F. B. Eisenbrandt, Foot of Light St., Baltimore, Md.
L. L. Tripp, Watervliet, New York

"SALTAIR" "SALTAIR"

The YACHTSMAN'S Newest and Foremost APPAREL OUTFITTERS

"SALTAIR" "SALTAIR" "SALTAIR" "SALTAIR" "SALTAIR" "SALTAIR"

The Brooks Uniform Company — one of the largest uniform outfitters in the world—now presents "Saltair" yachting apparel and accessories for Owners, Members, Officers and Crew.

"Saltair" uniforms conform to yachting regulations and are distinguished for fine tailoring, dependable fabric and the Brooks' policy of "the best at lowest prices."

ALREADY, Brooks has outfitted completely the personnel of a considerable number of yachts.

A catalog of Brooks "Saltair" Yachting Apparel will be sent upon request.

Brooks Uniform Co.

143 West 40th Street

(Opposite Metropolitan Opera House)
NEW YORK CITY

Telephone: PENnsylvania 5580

"SALTAIR" "SALTAIR"

MARINE SERVICE IN BOSTON

(*Continued from page* 180)

a cradle with ball-bearing casters, where she is then rolled over to the work benches.

Should the trouble be a nicked propeller, a specially devised tool which has been designed by the mechanic's staff, slips off the old wheel, after which the propeller shaft is carefully examined to see if it is out of line. If only a new propeller is needed, the proper size is obtained from stock in the parts department nearby, placed on, and the boat lowered back in the water, all within a period of half an hour.

Engine work is handled the same way. A crew of marine motor mechanics under the supervision of a former airport chief mechanic and a shop equipped with the latest power tools are prepared to handle promptly any kind of motor job the emergency requires in the shortest possible time. A complete stock of engine replacement parts on all models of Chris-Craft, A. C. F. cruisers and Dee Wite runabouts is kept up to inventory, while service is likewise available on Scripps and Chrysler gasoline engines, Standard and Treiber diesels.

A switching arrangement on the overhead monorail system enables the cranes to shift the boat to either end of the shop, depending upon the nature of the work. For engine repairs the cranes are switched left to the machine shop. For hull work, planking jobs, painting or re-varnishing, the cranes are switched right to the opposite end.

For transhipment via truck or rail, the boat is carried straight across the shop on the center rail which extends out into a cement paved drive. Trucks can back up to the door, on the same floor level and receive their load, while a spur track on a railroad siding running parallel for the length of the building makes loading and unloading from freight cars minus the expense of trucking to or from freight terminals.

Directly across on the other side of the cement drive is a six-story warehouse owned by the Noyes Marine Company, containing 72,000 square feet of floor space available for storage.

Supplementing the central headquarters of the Noyes Marine Company at Boston, waterfront branches at Marblehead and Gloucester operate likewise. These furnish North Shore patrons with a marine service that is the last word in efficiency. The network is now being extended southward as far as Providence to serve the South Shore and Narragansett Bay.

The entire plan was conceived and worked out by H. E. Noyes, president and general manager of the company, a former director of sales in the largest automobile distributing agency in New England, and an executive of vision and wide merchandising experience.

Its purpose—to provide motorboat owners with the same facilities on the waterways that the automobile owner today expects on the highways—is now realized.

This, surely, is faith in the future of the boat industry.

JOHN J. AMORY PASSES ON

(*Continued from page* 182)

the earliest days up to almost the moment of his death, he was a vigorous and consistent worker for the industry in the upbuilding of which he had such an important part.

Mr. Amory was the first president and one of the original incorporators of the National Association of Engine and Boat Manufacturers and served as its president from July 16, 1904, until March 1, 1918. In the latter year he suffered severe injuries in an automobile accident and was incapacitated for a long time. At that time he retired as president of the Association and was elected first vice-president, an office he maintained with enthusiasm until the time of his death.

Since 1918 Mr. Amory had been chairman of the exhibition committee of the Association, under whose auspices the National Motor Boat Shows have been held. During his entire connection with the motor boat industry he was a pillar of strength as an active supporter of the Association's work in connection with legislation, national shows and in the more recent developments of waterfront facilities throughout the country.

He was an active member of the Society of Naval Architects and Marine Engineers, of the Society of Automotive Engineers, the New York Yacht Club, Larchmont Yacht Club, Columbia Yacht Club and Engineers' Club.

Mr. Amory's funeral was held from the University Heights Presbyterian Church, 2167 University Avenue, Bronx, N. Y., at 2 P. M., Saturday, March 1. The pall bearers were: James Craig, Henry R. Sutphen, Clayton Mayo, Ira Hand, Hon. William F. Blakeley, William J. Bolen, William J. Parslow, Arthur G. Griese, Charles A. Criqui, Joseph S. Potter, John Lowery and John Vinal. Burial was in Kensico Cemetery.

Advertising index will be found on 3rd last page

Rugged, staunch, seaworthy—no yacht built excels the A.C.F. "47" in these three most important qualities. The "47" was designed, primarily, for family use. First emphasis was laid on safety. Next came those features of plan and arrangement so absolutely necessary if life aboard is to be a pleasure to every member of the family. : : Six sleep aboard with perfect comfort. There's plenty of deck-room. The bridge deck serves also as a roomy dining-saloon and lounge. An unusually large galley delights the cook. Ample locker and drawer space keeps your wardrobe spick-and-span. The toilet room is fitted with every conceivable convenience.

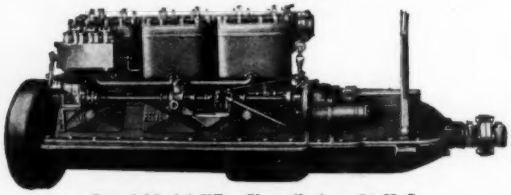
There's a "47" in our Marine Salon *now*. Drop in and look it over carefully at your leisure.

AMERICAN CAR AND FOUNDRY COMPANY

a.c.f.

247 WEST 57th STREET • • NEW YORK CITY

REGAL
offers 18 MODELS for 1930
1 to 6 Cylinders—2 h.p. to 75 h.p.



Regal Model KF. Six cylinders, 75 H. P. Bore 5¼". Stroke 7"

Model "GC"—30 H. P., four cylinders, 4¾" bore x 6" stroke, 800 r. p. m.
Model "KC"—40 H. P., four cylinders, 5½" bore x 7" stroke, 800 r. p. m.
Model "GF"—50 H.P., six cylinders, 4¾" bore x 6" stroke, 800 r. p. m.
Model "KF"—75 H. P., six cylinders, 4¾" bore x 6" stroke, 800 r. p. m.

Regal Engines are equipped with high speed reversing gears, silent chain drive for timing gears, gear oil pump lubrication

18 Models, ranging from 2 H. P. to 75 H. P.

Send for catalog and new price list

Also manufacturers of Regalite ¼ Kw. Air-cooled Electric Lighting Plants for boats and homes. Ask for particulars.

REGAL GASOLINE ENGINE COMPANY
Established 1901
74-82 WEST PEARL ST. COLDWATER, MICHIGAN

YACHTING CLOTHES
FOR THE
Owner, Officers and Crew
FOR
ALL OCCASIONS

OVER seventy-three years' experience outfitting mariners insures you not only the finest in custom made uniforms, but a guarantee of correctness in every detail of our garments.

Illustrated Catalog Upon Request

B. SCHELLENBERG & SONS
Established 1857
99 to 105 Myrtle Avenue, Brooklyn, N. Y.
(Near Bridge Street) Telephone: Cumberland 0804

PROVIDING FOR THE SMALL BOAT

(*Continued from page 65*)

close to the head. To protect the drums from rust clean them well with a wire brush and apply two coats of red lead and linseed oil paint. The bands should be painted the same way before fastening. A third coat after the drums are fastened down will do no harm and may help to keep the iron in better condition. The third coat may be any good outside paint of a desired color. Copper or composite bottom paint is suggested.

Replace the painted drums and fasten them in position, bungs up and well tightened in red lead. For fastenings use ⅜ inch by 1¼ inch band iron bent to the half shape of the drums and extended each side to within 2 inches of the top of the beams. At each end of the band drill two 7/16 inch holes for fastening. Tighten the upper bolts first and then draw up the lower ones using a large clamp to bring the band to the beam. If you have no clamp, use longer bolts and draw up with the nuts. By fastening in this manner the bands are drawn tightly around the drums and there is no danger of their shifting. If the float is to be used in deep water and can be hauled out without scraping or damaging the drums, the deck and finishing band around the edge completes the job. After painting, nail old fire hose to the edge to protect the boats from chafing while alongside the float.

Where the float will be used in shallow water and must be hauled over the beach to get it out of the water it would be advisable to build a protecting frame of 2 x 4s under the drums. Make the frame same size as the float frame, brace and put on vertical staving of 1 by 8 boards spaced 2 or 3 inches apart. Besides holding the stringers and stiffening the construction this staving adds to the appearance of the float.

Turn right side up and deck. There is a difference of opinion as to the material and method of decking. If laid of 1¼ inch by 6 inch square edged boards spaced ½ inch apart, water may splash up between the boards when the weather is rough. However, the decking will have a chance to dry after a storm and will, therefore, not rot out as quickly. A deck of matched boards will not let the water splash through the cracks, but the seams will always be soaked, or partially so. This neither wet nor dry condition is ideal for dry rot and the deck will soon begin to rot out at the seams. Fasten the decking with two 10d galvanized nails at each bearing.

In laying the deck start flush at one end and lay across the beams allowing the boards to project slightly beyond the frame or staving and when finished, strike a line and cut off flush. A band of the flooring material around the edge will finish off the ends of the floor and, covered with old fire hose, will protect the sides of boats landing at the float.

Do not paint the timbers. Give them two coats of hot wood preservative before placing the drums. The decking and staving will look better if painted but will last better if creosoted. When thoroughly dry most wood preservatives may be painted dark colors without the preservative striking through to any noticeable extent.

The manner of mooring the float depends largely on the location. If moored off shore from a dock or bank in shallow water, either spars or piles may be used. The spars are hinged to the stringers at each end of the float and to the shore. Wire cables crossed from each end of the spar fastenings prevent the float from drifting with the tide or weather and the spars hold it off shore. Turnbuckles in the cables will be handy for adjusting the tension of the cables and also the position of the float. There is no particular advantage in using spars. Four by four square sticks with angle iron fastenings may be used to good advantage. Two piles may be driven off shore and the float moored outside them. Reinforce the frame with chafing pieces where the float comes against the piles. The float is secured with iron bands around the piles. Fasten the bands to the stringer and adjoining beam with lag screws or bolts as it will be necessary to remove the bands before hauling the float. The same idea can be carried out in mooring the float alongside the dock in deep water. Substitute square sticks for the piles and bolt them to the dock with spreaders between. Place the lower fastenings so that the float will not hang at low tide. Round iron rod forged flat where the fastenings are placed will slide along the piles better than band iron as there will be no sharp corners.

The approach to the float moored off shore may be made from three 2 by 6 timbers floored same as the float and for best results should bear near the center of the float. The inshore end is hinged to the dock by a rod passed through the ends of the timbers and through angle irons lagged to the dock. Where it is desired that the runway bear near the inside edge, place a timber across the mooring piles and attach counterweights to the runway to take the weight from the float. If the float is moored alongside the dock an approach from a small platform extending over the edge of the dock will be necessary. Steps are not practical in this water as the treads would pitch either way except at one height of the tide. The approach had better be cleated about every 10 inches and a hand rail added as the incline will be quite steep at times.

W. B. M., Newburgh, N. Y.

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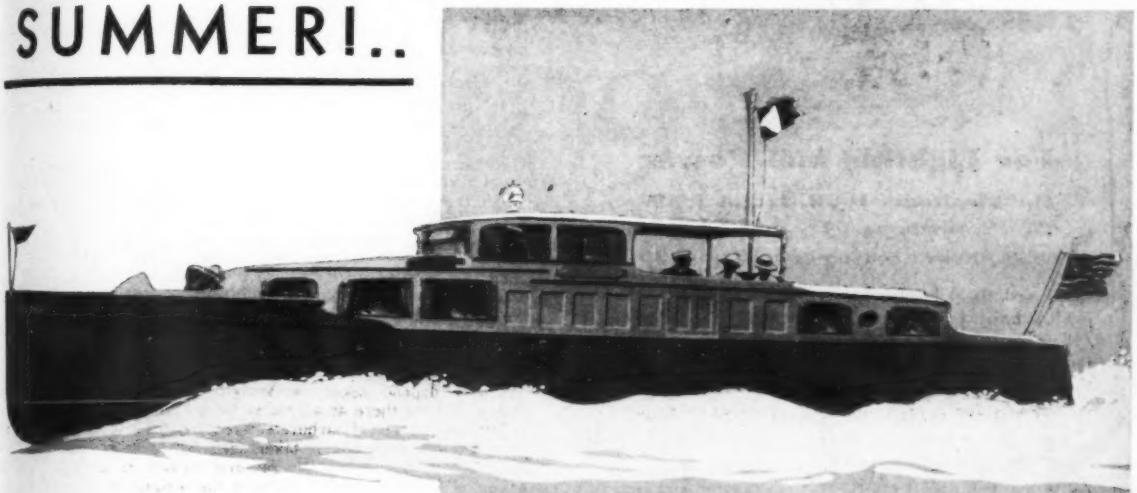
THERE'S STILL TIME TO MAKE THIS A LUDERSHIP SUMMER!..



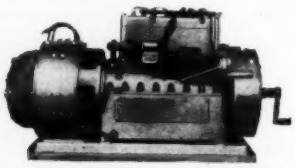
THE thrilling satisfaction of owning a yacht which will meet your standards exactly and in addition set new ones at your club, can still be yours this summer! For the Luders Yards are now in a position to accept a very few additional contracts for 42, 45 and 72 foot Express Cruisers in time for summer delivery. You are invited to inspect any of the luxurious Luderships now building or in storage at Stamford or, should this be impractical, we suggest your immediate request for plans and specifications.

LUDERS
MARINE CONSTRUCTION CO.
STAMFORD, CONN.

LUDERSHIP *means* LEADERSHIP

NOW READY

Three new series UNIVERSAL ELECTRIC PLANTS



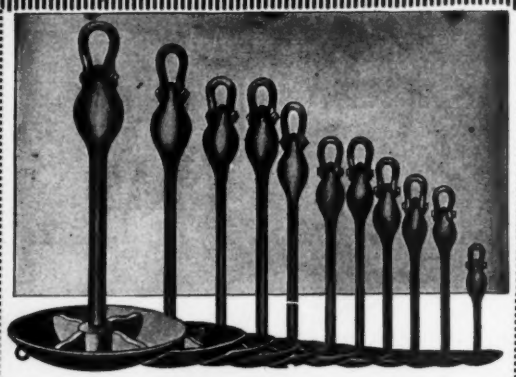
For Lighting and Power

The Flexifour—1½, 3, 4, and 5 KW
The SuperFour—7½ and 10 KW
The Six Cylinder Series—10, 15, and 20 KW

Unprecedented smoothness of operation assured by perfect balance of reciprocating and rotating parts. All units carefully balanced. Full pressure lubrication throughout. All adjustments and repairs facilitated through great accessibility. Designed specifically for marine use. Catalogs upon request.

Universal MOTOR CO.

UNIVERSAL MOTOR COMPANY
210 Harrison St., Oshkosh, Wis.



Fairhaven BULB SHANK Mooring Anchors

NUMBERS AND DIMENSIONS

No.	Diameter of Shank	Length of Shank	Weight of Bulb	Approx. Total Weight	Price
00	1¼"	2'	15 lbs.	50 lbs.	$ 9.20
0	1⅜"	2'	20	75	$12.20
1	1½"	3'	25	100	16.30
2	1⅝"	3' 4"	31	135	21.55
3	1¾"	3' 9"	38	165	25.05
4	2"	4'	44	200	28.40
5	2'	4'	50	230	31.85
6	2¼"	4' 6"	62	265	37.40
7	2⅜"	5'	71	300	42.30
8	2½"	5'	100	400	52.70
9	2¾"	5' 6"	125	500	65.88
10	2⅞"	6'	150	600	79.05
11	3"	6' 6"	206	700	92.25
12	3"	6' 6"	206	800	105.40
14	3"	7'	225	1000	131.75
15	3"	7' 6"	444	1250	164.70

Distributed by

Topping Brothers **157 VARICK STREET NEW YORK CITY**

INCREASING ENGINE POWER

(*Continued from page* 102)

size and weight of all parts, particularly reciprocating parts. It is a matter of common knowledge that when such weights are increased to a certain point the speed of the engine is limited and consequently in order to obtain the greatest speed range and flexibility, the number of cylinders have been increased and the bore and stroke kept down to a minimum.

Many who have heard of superchargers usually identify them as something that has been previously used on high-speed racing automobiles, but this type of blower should not be confused in any way with the Root supercharger as used on marine engines. Some types of superchargers for automobile racing operate at speeds as high as 32,000 r.p.m. which is perhaps five times the crankshaft speed of the engine driving it. As against this the Root blower is generally run at or slightly above crankshaft speed and accordingly there is no more wear than there would be on the average generator or other attachment to the engine—in fact, not as much.

In operation the air passes through the carbureter in the usual form and then through a short intake pipe into the blower. With the rotation of the wings, practically any type of mixture, which, before entering the blower has not been correct, is turned into a combustible vapor and delivered to the intake valves. As the average attachment of the blower will give normally a pressure of from 4 to 6 pounds in the manifold, the actual shape and size of the manifold as well as the distance of the last cylinder from the blower makes comparatively little difference. At the same time if one of the cylinders should be weak there is no appreciable difference in the volume of mixture delivered to it, due to the fact that the entrance of the charge does not depend upon the suction of each individual cylinder but is waiting there at all times to get in, under pressure.

Ordinary types of carbureters require the use of a manifold to heat the gas before it is taken into the cylinders and this heating operates to expand the gas and reduce its weight. Now as power is directly proportionate to the weight of the mixture put into the cylinders the lightening of the mixture tends toward cutting down the power. However, no carbureter application, either down-or up-draft can go further to assist the power of the engine because both are dependent entirely on the suction of the cylinder which draws the gas in. The blower actually puts it there and at idling speeds even if the piston rings are entirely removed from the piston, the motor will run practically as evenly as before.

Another decided advantage of the blower is the fact that the mixture going to each cylinder will be uniform and for this reason, together with the complete filling, an economy is shown for the amount of power derived.

It must be remembered that in the application of a blower the working parts of the engine must be increased in strength to take care of the extra work which is put upon them and therefore it is indiscreet to attach a blower to the average engine not built for it with the hope of raising its normal power as it would only be a question of a short time before the working parts would give way under the additional strain.

Objections have been raised to superchargers on the grounds of the noise which has been peculiar to the centrifugal type with its high pitched whine but the correctly designed intake of a slow speed Root blower entirely eliminates this, and the passage of air through the carbureter of the average high-speed engine is about as pronounced as the air speed noise of the Root blower inlet.

NEW AIR-FILLED FENDER

Owners of fine boats . . . cruisers, and yachts, will welcome the introduction of an innovation in fenders—a buoyant, light, and resilient fender that protects boats, preventing cork-stained hulls, rope grease, etc., and eliminating bumps and jolts when docking. This fender, known as the Saf-Air fender is a development of the Appliance Manufacturing Company of Detroit—a product devised for those owners of fine craft who wish every possible protection for their boats.

Fastened to the side of the boat, the Saf-Air Fender gently pushes the boat away from the dock. It is half the weight of ordinary fenders and has more buoyancy than a life preserver. It is encased with extra heavy duck and contains a durable rubber bladder that will not pinch. The bladder is inflated like a tire, and through its use the thrust is variable. For instance, as the fender first is pressed against the dock the pressure is low, but increases as the fender is compressed by the added thrust. Through this construction the fender acts as a cushion for the boat.

Advertising index will be found on 3rd last page

A Complete Inboard Motorboat

For All the Family

at $1095—

With Self-Starter, Wheel Steering, Safety Glass and Automobile Comfort

NEW SPEED—28 MILES PER HOUR
SAFETY LENGTH—FULL 17 FEET
MORE MILES TO THE GALLON

WOULD you like to own a new, fast, completely-equipped inboard motorboat that all the family can drive this summer? With all the style and good looks of a big $3,000 runabout? And faster, probably, than anything of its size or class in your neighborhood? Strong, safe and seaworthy, and economical . . .

That's what the new Dunphy Flying Dutchman is—the achievement of 64 years of boatbuilding, and more honest value for your money than you could ever buy before. Follow us carefully while we give you a few facts about this remarkable boat, and see if anything ever equalled it: (1) Double framework on bottom, all strong white oak. (2) African mahogany planking throughout. (3) All copper and brass fastened. (4) Custom-built beauty—long life. (5) Expensive, durable upholstery. (6) Automatic self-baler. (7) 2" extra width in front cockpit. (8) Extra room around motor. (9) Unusually wide stern—better riding qualities. (10) 28 m. p. h. (11) More miles to the gallon. (12) Shatter-proof glass windshield. (13) Dependable safety—length 17ft. (14) Plenty of room (beam 5'2") for five. (15) Complete radio as extra equipment. *Your order can be filled immediately.*

Driving the Flying Dutchman is an entirely new sensation. You get all the comfort and substantial feeling of a big $3,000 runabout. It *feels* safe and it is safe. And its unusual speed is a new delight you can't appreciate till you've stepped on the starter. Orders can be filled at once.

What Are Your Boat Problems?
64 Years Experience Qualifies Us To Help You—
Send for Free 1930 Catalog

Write to us today. Tell us what you need. We'll tell you what boat and equipment to use. 64 years' building of all types of boats and motorboats qualifies our Personal Service to give you good reliable advice. Address Dept. AMB. Dealers: Write!

Safety **DUNPHY**

BOAT MANUFACTURING COMPANY, Eau Claire, Wisconsin

In Canada: **Paul Paquet, 50 Maple Avenue, Quebec**

SOMETHING *New* *for* YOUR BOAT

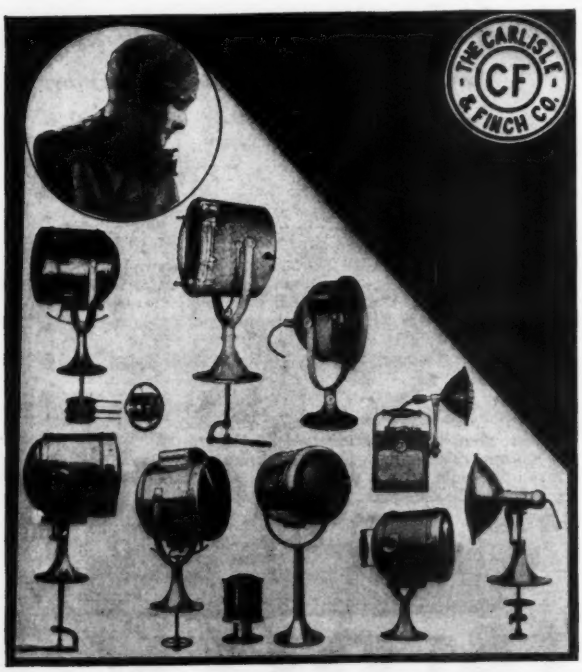
Make your boat the kind a fellow brags about. You'll get a lot of new ideas from our Marine Catalog, a veritable "encyclopedia" for water sportsmen. Hundreds of inexpensive items illustrated, handsome and convenient fittings, everything you need to equip a new craft or to remodel an old one. Send today for our Marine Catalog—it's free!

Established 1840

GEO·B·CARPENTER & Co.

Marine Supplies : Sailmakers and Riggers

200 W. AUSTIN AVE., CHICAGO, ILL.



The girl in the sun looks down on her rivals, the brilliant Searchlights made by The Carlisle & Finch Co. The inky darkness about your boat is stabbed with a piercing white ray of light.

Send for Catalog I—incandescent. Catalog A—arc.

THE CARLISLE & FINCH CO.

261 EAST CLIFTON AVE. CINCINNATI, OHIO

DOCUMENTED YACHTS

(*Continued from page* 16)

tions that are given at the time the document is sought.

Upon the document and its copies are entered the facts concerning the ownership, construction and measurements of the vessel. Likewise, the name of the designated master is entered and thereafter the craft must never be navigated without the master on board the boat. A change in the master originally named, however, may be made at any customhouse at any time, provided the document is submitted so that the change may be noted on it. It is permissable, also, to have alternate masters named on the document and the craft may be navigated when any one of the designated masters is on board.

The document is renewable at the end of each year, at which time the master is required to repeat his oath. The renewal must be made within three days of the expiration date of the document but, should the craft be at sea at that time, the renewal may be made without penalty within three days of the return of the vessel to a customs port. If a document is lost, destroyed, mislaid or withheld, the master may request a new document of the collector of customs at the first port the vessel touches thereafter. He will be required to cite the circumstances under oath and, upon doing so, a new temporary document will be awarded the vessel. This, however, must be surrendered to the collector of customs within ten days of the arrival of the boat in her home port. At that time a new permanent document will be issued the vessel and the temporary document sent to the Commissioner of Navigation for cancellation.

INSPECTION

All steam yachts which are used to carry passengers for hire are required to be inspected by the local Board of Steamboat Inspectors. Likewise, all steam yachts which exceed sixty-five feet in length are required to be inspected by this Board of United States Steamboat Inspectors, whether or not they engage in carrying paying-passengers. In the case of steam yachts which are not more than sixty-five (65) feet in length, the vessel not being employed to carry passengers for hire, provision is made for the approval of the engine, boiler or other operating machinery after due inspection or personal observation by the local inspectors. This arrangement frees these smaller steam yachts which do not carry passengers for hire from the annual inspection required of yachts which exceed the sixty-five foot length limit or which carry paying-passengers.

Motor yachts which do not exceed sixty-five feet in length are not subject to inspection but motor yachts which are more than fifteen (15) gross tons in measurement and which carry passengers for hire are required to undergo inspection whether or not they exceed sixty-five (65) feet in length.

In all instances where required, the inspection is carried out before the issuance of the document and the certificate of inspection must thereafter be kept on board the craft. The inspection covers both hull and machinery of the vessel and is technical in character. At the time of inspection, the size and make-up of the operating crew is prescribed by the authorities for those craft which are to be used for the carrying of paying-passengers. On the motor yachts which carry passengers for hire and are subject to inspection by virtue of exceeding fifteen tons in measurement, the only licensed member of the crew, however, is the person who holds a license which permits him to operate a motor boat engaged in carrying passengers for hire.

When in operation, any yacht, of course, may be hailed and boarded for inspection purposes by a customs officer. The inspection covers the necessary marine papers, equipment and make-up of the crew, when prescribed, as well as an examination in the interest of the public revenue. All yachts, therefore, should keep ready for display to a possible boarding officer the document, and, if required, the certificate of inspection, passenger-carrying license, etc.

EQUIPMENT

At the time of inspection, the necessary equipment is prescribed for all steam yachts and motor yachts which exceed sixty-five feet in length. On motor yachts which are not required to be inspected by virtue of not exceeding sixty-five feet in length, the necessary equipment is the regulation motor boat equipment prescribed by law. Under this law, motor yachts which are less than twenty-six feet in length are required to carry a sound-producing mechanical appliance, sufficient approved life-saving devices, approved means for extinguishing burning gasoline two copies pilot rules, and, when in operation between the hours of sunset and sunrise, a white light aft and a combination red-and-green light foreward.

Motor yachts which are twenty-six feet or over but which do not exceed sixty-five feet in length are required to carry a whistle, fog horn, fog bell, sufficient approved life-saving devices, approved means for extinguishing burning gasoline the pilot rules and, when in operation between the hours of sunset and sun-

(*Continued on page* 194)

Advertising index will be found on 3rd last page

HYDE DISTRIBUTORS

Consult them for Prompt and Efficient Service

SEASIDE PARK, N. J.
Seaside Park Boat & Marine Supply Co.
ATLANTIC CITY, N. J.
Albert Creighton
437 North Massachusetts Ave.
PHILADELPHIA, PA.
Marine Equipment & Supply Co.
116 Walnut Street

NEW BEDFORD, MASS.
Hathaway Machinery Co.
N. Water and Elm Streets
PROVIDENCE, R. I.
John McLeod, Jr.
Edgewood Station
NEW LONDON, CONN.
The Darrow & Comstock Co.
114 Bank Street
JONESPORT, MAINE
William Frost
HARTFORD, CONN.
Clapp & Treat, Inc.
68 State Street
GLOUCESTER, MASS.
Gorton-Pew Fisheries Co.
NEW YORK CITY
C. R. Andrews
143 Chambers Street
ROCHESTER, N. Y.
Rochester Boat Corp.
Charlotte Sta.
BIVALVE, N. J.
Stokes-Schubert
WILMINGTON, DEL.
David A. Hay & Co.
121 Market Street
MOREHEAD CITY, N. C.
Marine Hardware Company
ALEXANDRIA BAY, N. Y.
Hutchinson's Boat Works
RED WING, MINN.
Red Wing Motor Company
CLEVELAND, OHIO
W. F. Meier
1220 Warren Rd., Lakewood
OWENSBORO, KEN.
Wright Machine Co.

JACKSONVILLE, FLA.
Burroughs-McMeekin Company
ST. PETERSBURG, FLA.
Bayboro Marine Ways Co., Inc
WEST PALM BEACH, FLA.
Palm Beach Mercantile Company
DETROIT, MICH.
Kermath Manufacturing Company
5880 Commonwealth Ave.
EVANSVILLE, IND.
Clarke Gas Engine Co.
FREEPORT, LONG ISLAND, N. Y.
Hughes-Drake Corp.
31 West Merrick Road

PORTLAND, ME.
Boyce & Rutledge Co.
7 Central Wharf
Charles F. Guptill Co.
175 Commercial Street
BOSTON, MASS.
Rapp-Huckins Company
138 Beverley Street

EVERY GENUINE
HYDE
BEARS THIS TRADE MARK

ST. LOUIS, MO.
Webb Hardware Company
806 North Broadway
William Grossmann
1908 Olive St.

KANSAS CITY, MO.
Covert Boat & Engine Co.
1330 McGee Street
CHICAGO, ILL.
W. L. Masters & Co.
800 No. Clark Street

MILWAUKEE, WIS.
Joys Bros. Co.
201 East Water Street
NEW ORLEANS, LA.
Stauffer, Eshelman & Co.
511 Canal Street
Woodward, Wight & Co.
Alker-Donovan Co.
435 Camp St.
GALVESTON, TEX.
Wallace T. Taylor
2007 Strand
VANCOUVER, B. C.
Hoffars, Limited
1790 Georgia St., West

PORTLAND, ORE.
Oregon Marine & Fisheries Supply Co.
105 First Street
The Beebe Company
First and Washington Streets
SAN FRANCISCO, CALIF.
Johnson & Joseph Co.
56 Sacramento Street

SEATTLE, WASH.
Pacific Marine Supply Co.
1223 Western Avenue
Atlas Gas Engine Agency
82 Marion Street
BALTIMORE, MD.
Mahon & Gall
Pratt and Gay Streets
CRISFIELD, MD.
Clarence Sterling & Son
1104 Main Street
NORFOLK, VA.
Gas Engine & Boat Corp.
First Street near Front
CHINCOTEAGUE, VA.
Conant Bros.
CHARLESTON, S. C.
Marine Supply & Engine Co.
149½ Meeting St.
SAVANNAH, GA.
White Hardware Company
25 Congress St., West
MIAMI, FLA.
Hopkins-Carter Company
Miami Ave. and S.E. 2nd St.
KEY WEST, FLA.
Thompson Fish Co.
TAMPA, FLA.
Knight & Wall Co.
PENSACOLA, FLA.
D. M. Witherill
713 South Palafox Street
MOBILE, ALABAMA
Marine Supply Company
MONTREAL, QUE.
John Leckie, Ltd.
714 Notre Dame Street, W.
TORONTO, ONTARIO
John Leckie, Ltd.
77 Wellington Street
WILMINGTON, CALIF.
Fellows and Stewart

ST. JOHN, N. B.
The Canadian Fairbanks-Morse Co., Ltd.
BRENTFORD, ENGLAND
George Spicer, Market Place
AUCKLAND, NEW ZEALAND
W. R. Twigg, Ltd.
BUFFALO, N. Y.
Edward Magner & Sons
90 Main Street
WASHINGTON, D. C.
Barber & Ross, Inc.,
11th & G Sts. N. W.

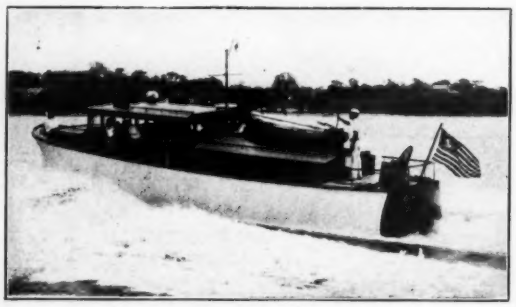
Write for a copy of "Propeller Efficiency"

HYDE WINDLASS COMPANY

BATH, MAINE

Masterpiece of the Sea
Every yacht built by M. M. Davis and Son is truly a masterpiece of the sea, the work of artist craftsmen, a creation of beauty, grace and seaworthiness.
Custom Built Yachts
Today As Always!
Many yachtsmen who have once experienced owning a yacht built by M. M. Davis & Son have their second, third and fourth yacht built in this yard. A remarkable tribute to quality and craftsmanship.
Write for list of power and sail yachts we have built.
M. M. DAVIS & SON
For Three Generations
CUSTOM BUILDERS
of fine Sail and Power Yachts
SOLOMONS
MARYLAND

Huckins Uses INDOAKO



The Fairform Flyer

beautiful and sturdy, built by the *Huckins Yacht Corporation*, of Jacksonville, Florida, is planked with

Philippine INDOAKO Wood

When such a prominent boat builder, whose product is so favorably known, prefers one material to all others, *there must be reasons!* They are to be found in the exceptional sturdiness, beauty of grain, minimum water absorption, resistance to teredo attacks, and *reasonable* price of Philippine INDOAKO.

We want to tell you more about INDOAKO. Upon request we will send you much helpful and interesting information.

INDIANA QUARTERED OAK CO.

222 East Avenue — Long Island City, N. Y.

DOCUMENTED YACHTS

(*Continued from page* 192)

rise, a white light forward, a green light to starboard, a red light to port and a white light aft. The measurements of some of these items are required to be larger on craft which are forty feet or over than on those yachts which are less than forty feet long.

All equipment is required to be carried in good condition and to be so placed as to be immediately available in any emergency. The equipment prescribed for use on motor yachts which carry passengers for hire is exactly the same as is prescribed for motor yachts which are not so employed except that the life-saving devices must be of prescribed rather than approved types and carried to the number of one for each passenger on board the vessel.

NAVIGATION

The one requirement which all steam and motor yachts must observe in respect to the actual navigation of the vessel is that two copies of the official PILOT RULES must be kept on board the vessel. These RULES are merely the rules of the road which have been set up by the authorities for the proper and safe navigation of all boats. All masters and owners of yachts, therefore, are expected to be guided by these rules in the operation of their vessels.

The RULES are issued in placard and pamphlet forms and the form that must be carried on an individual yacht is determined as follows:

1. On steam and motor yachts of over one hundred (100) gross tons, two copies of the placard form must be carried. One of the copies must be posted in the pilot house of the craft and the other in some conspicuous part of the vessel.

2. On steam and motor yachts which are over twenty-five (25) gross tons but not over one hundred (100) gross tons, two copies of the placard form must be carried. One of them is required to be posted in the pilot house of the craft. The other may or may not be posted.

3. On steam and motor yachts of twenty-five or less tons but over ten (10) gross tons, two copies of the placard form are required to be carried. When practicable, one of them is required to be posted in some conspicuous part of the boat.

4. On steam and motor yachts which do not exceed ten (10) tons in measurement, two copies of the phamphlet form are required. One of them is to be posted up in the craft when practicable.

The PILOT RULES are procurable, without cost, at any customhouse or local office of the United States Steamboat Inspection Service. It is important that in addition to carrying the rules, they be read and studied from time to time so that the operator will be thoroughly familiar with their contents. These rules must be strictly observed at all times as the safety of navigation depends on a careful observance of their requirements.

CLEARING AND ENTERING

Documented yachts always are permitted to proceed from port to port within the United States without entering or clearing at the customhouse. Likewise, documented yachts, used strictly for pleasure purposes of course, are permitted to proceed to foreign ports without clearing at the customhouse.

On returning from a foreign port, a documented yacht is not required to make entry at the customhouse if she is of fifteen (15) gross tons or under and not permitted by law to carry merchandise or passengers for hire. On returning from foreign pots, all other documented yachts, however, are required to make entry at the customhouse of the port of first arrival. But, regardless of tonnage, all documented yachts which return from foreign ports with dutiable articles on board are required to make entry. The master of such a yacht must report to the customs officer at the port of arrival and deliver to hi ma manifest, or invoice, of all the dutiable articles brought in by the vessel.

No documented yacht is subject to a tonnage tax on entry from a foreign port.

Undocumented yachts, on the other hand, which are not nationaled or shown to be yachts by proper registry, enrollment or regular marine document, foreign or domestic, are subject to the tonnage tax on entering from a foreign port. These undocumented yachts, if they are owned by American citizens, are not required to enter or clear or pay tonnage tax on a coastwise voyage terminating in the same great district. But on all foreign voyages, they must enter or clear as the case may be.

CARRYING PASSENGERS FOR HIRE

On steam yachts engaged in carrying passengers for hire, licensed officers are required. On motor yachts which do not exceed sixty-five feet in length, the only licensed officer required is a holder of a federal license which permits one to operate a motor boat used for such a purpose. This license is granted, upon formal application, by the local Board of United States Steamboat Inspectors.

(*Continued on page* 196)

Advertising index will be found on 3rd last page

ACO SEABOATS

Built by

THE AEOLIAN COMPANY

MARINE DEPARTMENT, NEPONSET, MASS.

ACO Seaboats are beautifully finished and mahogany planked. They have more free board, more comfort and ability in rough water. The motor is located in extreme stern. ACO hulls have more usable room and plane easier even with full load. They have round bilges and do not pound. They are faster yet still retain the seaworthy qualities and constructural superiorities found only in round bilge bottoms.

PLACE ORDER NOW

ACO Seaboats are built in three sizes, 16, 20 and 26 feet.

Model 16 has 40 H.P. motor, travels at 25 M.P.H. and seats six comfortably.

Model 20 has 70 H.P., exceeds 30 M.P.H. and carries eight.

Model 26 has 140 H.P., seats 12 and does 32 M.P.H.

ACO Seaboats will outlast the cheaper hulls, will outrun them and will take you safely through rough water that will turn back anything else of their size. All models can be furnished with greater power and additional speed if desired.

Made to endure by a Company with a reputation second to none. Write today for full information.

THE AEOLIAN COMPANY
Aeolian Hall, New York

The
KOLSTER RADIO COMPASS
for
YACHTS and SMALL CRAFT

REDUCTION IN PRICE

HAS a normal range of 50 miles and is as accurate in thick or stormy weather as in clear weather. Suitable for vessels as small as 40-footers.

Many prominent yachtsmen are installing this type of Kolster Radio Compass. Commander Byrd took two of the larger type Kolster Radio Compasses on his Antarctic Expedition.

Write for Details, Including Prices and the Many Uses to Which this Compass Can be Put.

FEDERAL TELEGRAPH CO.

392 East 147 St. Cleveland
625 Market St. San Francisco

KOLSTER RADIO COMPASS

R. W. ZUNDEL CO. INC.

ZUNDEL

Replace Your Tiller Connections with

ZUNDEL TILLER ROPE

An exceptionally strong and flexible wire rope made especially for steering connections. Can be used on steering wheels with small drums, pulleys, etc. Woven with more than 250 strands of fine galvanized wire over cotton centers. We supply large quantities to U. S. Coast Guard, Matthews, Dawn, King, Keyport, Post and many other prominent builders and shipyards. Unsurpassed in quality and price. Sizes 3/16", ¼", 5/16", ⅜". Special prices on wholesale quantities.

American Distributors for

RAIN—SPAR VARNISH

A special salt-water resisting varnish of substantial body that dries hard in 24 hours. Insures a handsome durable finish that looks good all season. Especially suitable for showing up the grain in fine mahogany. Price lower than any other spar varnish of equal quality.

STANDARD LIFE PRESERVERS

U. S. Government Inspected solid cork life belts, approved for ocean going vessels. $24.00 a dozen.

Write today for 1930 illustrated catalog and prices of all marine supplies. Special discounts to established marine dealers, boat builders and yards.

R. W. ZUNDEL COMPANY

Wholesale and Retail Distributors of STANDARD MARINE PRODUCTS

47 WHITEHALL STREET NEW YORK, N. Y.

Telephone: Bowling Green 9157

DOCUMENTED YACHTS

(*Continued from page* 194)

quired is a holder of a federal license which permits one to operate a motor boat used for such a purpose. This license is granted, upon formal application, by the local Board of United States Steamboat Inspectors.

On steam yachts and on such motor yachts as exceed sixty-five feet in length, the equipment is prescribed by the local inspectors for vessels used to carry paying passengers. On motor yachts which are not over sixty-five (65) feet long, the equipment is the same as that prescribed for motor boats not engaged in carrying passengers for hire, except that the life-saving devices must be prescribed types and that a separate device must be carried for each passenger.

All steam yachts which carry passengers for hire are subject to inspection. In addition, all motor yachts so employed are required to undergo inspection if they are of more than fifteen tons in measurement.

CHANGE IN OWNERSHIP

The owner of a documented yacht, of course, is required to report to the proper collector of customs the loss or abandonment of his craft and cite the circumstances of the case.

When the owner of a documented yacht sells or otherwise disposes of his vessel to another, he is required to notify the collector of customs and surrender the document of the craft. Upon doing so, he terminates his responsibility for the craft and her license. The succeeding owner is required, in his turn, to originate proceedings anew for the issuance of another document.

If application for a new document is made at once by the new owner, the document can be issued without delay if the purchaser is an American citizen and the sale made in the United States. If the vessel has been purchased abroad by an American citizen, the new owner must apply for the new document within three days after the entry of the craft in a port of the United States. If an American citizen disposes of his yacht to an alien in this country, he must return the document to the collector within seven days; if he disposes of his craft to an alien in a foreign port, it is obligatory for the master of the vessel to return the document to the collector within eight days of his arrival in the United States.

Yachts owned wholly or in part by an alien are not granted documents. Instead, such vessels are assigned a certificate of record upon the submission of the necessary data and taking of the required oaths.

If an old or new owner of a yacht wishes to change the name of his vessel, he must make formal application, in duplicate and under oath, to the Commissioner of Navigation. The recommendation of the proper collector of customs is required to be forwarded the commissioner with the application. If the request is granted, formal notice of the action is required to be published in four consecutive issues of a daily or weekly newspaper in the customs district in which the craft is documented. The costs of the necessary evidence and publication notices must be met, of course, by the applicant who, likewise, is required to pay the necessary fee. This is of varying amounts which are determined by the tonnage of the yacht.

ALUMILITE, A NEW PROCESS

A process developed by the Metals Protection Corporation is an electrolytic method of applying an entirely new protective and decorative coating to aluminum and its alloys. It may be had in either a silvery white or in a variety of colors, including black, various shades of blue, yellow, red, brown, green and purple. The following is a brief summary of its properties, uses and advantages.

Adhesion. This coating is an integral part of the aluminum itself. It will not crack, chip or peel off. Treated sheets may be stamped and formed into many shapes.

Corrosion Resistance. Alumilite offers unusual resistance to atmospheric and salt water corrosion. Relatively pure aluminum shows best results for the reason that it has in general a homogeneous and continuous surface. Samples subjected to the salt spray test show perfect resistance after 3,000 hours.

Wear Resistance. The standard Alumilite coating shows more resistance to wear than a heavy nickel plate.

Hardness. Alumilite will not withstand cutting by a sharp pointed instrument, but does offer considerable resistance to same. A blunt instrument will force the coating into the softer metal beneath without rupturing. Its resistance to scratching is another indication of hardness, and is equivalent to that of an intermediately hard steel.

Fastness of Colors. Over sixty colors have been subjected to fadeometer tests by several testing laboratories. While certain colors were found unsuitable because of lack of fastness, a group of varied colors which will not fade, even under the severe test of 300 hours fadeometer exposure have been developed.

Advertising index will be found on 3rd last page

Dealers: **If you want to sell an oil that stands back of every claim you can make for it, ask us.**

The White & Bagley Co., Worcester, Mass.

If Motors Could Speak we wouldn't need to Advertise

Oilzum

THE BEST
is none too good
for YOUR BOAT

SILVER SUDS
TRADE MARK

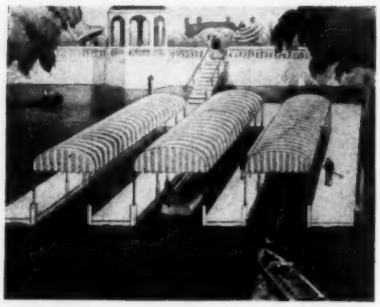
CLEANS INSIDE AND OUT. IT IS THE
PERFECT PAINT CLEANER

Restores original finish without harming surface.
Unsurpassed in Engine Room. Removes grease instantly
Sold in 1, 2, and 5 gallon containers.
Send 50c for trial can to the

SILVER SUDS MFG. CO.
829 North 19th Street, Philadelphia, Pa.
Established 1896. Dealers and Distributors wanted.
Topping Bros., New York Distributors.

SILVER SUDS
MARINE CLEANSER

ARTISTIC
STEEL FLOATS and DOCKS



WALSH-BUGBEE CO. triple slip float designed and built for a prominent yachtsman at Great Neck, L. I.

WALSH-BUGBEE Artistic Steel Floats and Docks —built on sound engineering principles — are not only utilitarian in design and sturdy in construction, but particularly artistic in appearance, adding a note of dignified color to one's waterfront property without detracting from the beauty of the surrounding landscape. Walsh-Bugbee floats are designed to meet every situation and condition—with or without slip drives. Let us solve your mooring problems.

Our Marine Engineer will gladly submit plans for your requirements without obligation. Send today for latest catalog.

A FLOAT AS GOOD AS YOUR BOAT

THE WALSH-BUGBEE COMPANY INC.

Executive Office 4 West 56th St. | Telephone Circle 4653 | Allen B. Walsh Gen. Sales Mgr.

YARD AND SHOP

(*Continued from page* 152)

W. K. VANDERBILT BUYS SEA LYON

Howard Lyon, builder of the Sea Lyon, announces that sales for the first two months of 1930 were 50 per cent. greater than those for the corresponding period of 1929.

One of the reasons for this, Mr. Lyon believes, is that the number of Sea Lyons now in service in various parts of the country is kindling a desire for possession in the scores of prospective purchasers of fast boats who ride in them as guests. Naturally, therefore, as more Sea Lyons are sold, sales increase in direct proportion.

Among the recent sales of these fine boats is one to W. K. Vanderbilt, whose judgment of fine craft is backed by years of experience.

This newest Sea Lyon—Mr. Vanderbilt's fifth Sea Lyon, incidentally—will be used in tender service for the yacht Ara. Mr. Vanderbilt is only one of a great number of well-known yachtsmen who have purchased Sea Lyons on the strength of the excellent performance of one or more of the same make already owned.

THE NEWEST EXPRESS CRUISER

Fine on the show room floor—but more beautiful still in the water is this new Chris-Craft. Her gleaming mahogany sides and symmetrical lines made her at once the hit of the New York Motor Boat Show. But she was not built for show rooms—her home is on the high seas.

Today these boats are sporting themselves beneath Southern skies. Pictured is the new 48 foot Chris-Craft yacht Allez, the latest addition to the Miami fleet. Owned by Howard Olmsted, prominent Cleveland insurance broker, she embodies indeed the spirit of modern transportation. Our photographer has caught her in a happy pose, as she slipped in from an off-shore fishing trip. Her owner has gone ashore for supplies, and in an hour they will push off again. Her twin Chris-Craft motors carry her at a gay thirty miles per hour, and riding that way is indeed the epitome of pleasure.

Behind her is another extreme in water transportation; the old time sailing vessel. While this ungainly sailing ship is getting away from her moorings and preparing to sail, Allez will have gone twenty miles or more at a rollicking rate of speed.

IRA HAND SURVEYS HARBORS

Ira Hand, secretary of the National Association of Engine and Boat Manufacturers, and Richard R. Blythe, of the Association's publicity counsel, left on a two and a half month's trip during which they will attend the motor boat shows in Los Angeles, Detroit, Seattle, San Francisco and Chicago. During the trip they will visit the various cities on the Pacific Coast, as far north as Vancouver, to meet with yachting and city officials, inspect actual and proposed waterfront improvements and in every way possible to extend this work inaugurated by the National Association, with special reference to the wonderful cruising territory in Puget Sound.

FOREIGN TRADE OPPORTUNITIES

According to a recent issue of the Automotive World News which is published by the Automotive Division of the Department of Commerce an opportunity exists for the establishment in Paris, France of an agency for light diesel motors adapted to use in motor boats, trucks, tractors, etc. A similar opportunity is open to some enterprising manufacturer in Para, Brazil, for the distribution of inboard gasoline marine engines. Reserved information may be obtained from the Bureau and its district and cooperative offices by duly registered firms and individuals upon written request. In writing, reference should be made to the Bureau's opportunity number which, in the case of the Paris agency, is 44,126, and the Brazilian opening, number 44,124. The Automotive Division is a branch of the Department of Commerce and may be addressed at their main office, Washington, D. C.

APPOINT JOHNSON DISTRIBUTORS

The Johnson Motor Company announces the appointment of the Sampson Electric Company, well-known Atwater-Kent distributors, as distributors for the Johnson line of motors and boats for Chicago territory.

The Van Camp Hardware Company, Indianapolis, one of the largest and best-known hardware concerns in Indiana, has also taken on the exclusive distributorship of the Johnson line in the Indianapolis territory.

(*Continued on page* 202)

Another "FALCON" Sweeps Into Popularity—

THE FALCON "25"

The Falcon Series includes the following 6 models: 5 HP "single"—10 HP "twin"—15 HP "four"—25 HP "four"—40 HP "four"—50 HP "six"

WE knew the "Falcon 25" would be a *winner*—but hardly expected it to sweep into such overwhelming popularity almost overnight.

Airmail letters, telegrams—even long distance calls—are pouring in with orders for this speedy, powerful "Falcon 25."

Individual boat owners, dealers and boat builders are welcoming it with open arms.

The $298, of course, is complete with reverse gear. Without reverse gear . . . for small speed boats . . . even less.

If you want to enjoy the speed, stamina and smoothness which distinguish the "Falcon" Series from all other motors in a sweet little engine of 25 mighty horses . . . write for complete information at once.

If you are interested in any other Falcon engine . . . or "U. S." Super-Smooth Electric Plant . . . tell us, and full details will come to you immediately.

"FAIRFORM FLYER"

endorses "U. S." super-smooth ELECTRIC PLANTS

"As you know, we use your super-smooth electric plants exclusively. They start without a murmur, charge batteries in short order, make minimum vibration and when not in use, are completely out of the way."
—Huckins Yacht Corporation.

"U. S." super-smooth Electric Plants for marine use and land use include 9 models from 350 watts to 7½ K.W. in 12, 32 and 110 volts.

Write for literature.

UNITED STATES MOTORS CORP.

Established 1890

Factory and Main Office
102 Nebraska Street
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Central and Eastern Canada Sales Office:
Maddox Engineering Co.
75 Adelaide Street, W.
Toronto, Ont., Canada

Pacific Coast Sales Office:
Machinery Exporters, Ltd.
Merchants Exchange Bldg.
San Francisco, Calif.

MASTER
CRAFTSMANSHIP
AT
MODERATE
COST
Before ordering your new sport runabout, by all means, write for illustrated literature describing the new ATLAS runabouts in 19, 23, 26 and 30 foot lengths. Up to 30 and 45 skimming miles per hour are neatly tucked away into the racy lines of each model. They are designed by master craftsmen to provide the utmost in riding comfort and ease of control at all speeds. You'll thank yourself for having written for full information. Because, in addition to their ultra-custom design, ATLAS prices are exceptionally moderate—as low as $1575 for the 19 foot, fully equipped all-mahogany runabout.
"Atlas"
Dealers write for special dealer propositions
ATLAS BOAT CORPORATION, MENOMINEE MICHIGAN

Modernize Your Boat with a MORSE REDUCTION GEAR
A Morse Straight Line Reduction Gear will give your boat more speed and maneuverability, together with lowered maintenance and operating costs. Power at the propeller is increased and vibration is materially lessened. These gears are the ideal equipment for modern type power plants.
Morse Straight Line Reduction Gears are available for both Diesel and slow speed gas engines, as well as the higher speed motors. Installation drawings, and complete information will be mailed free upon request. Please state size and type of power plant when writing.
Morse Chain Co.
7601 Central Ave.
Detroit, Michigan
Photograph showing relative size of two new heavy-duty Morse Reduction Gears.
MORSE
STRAIGHT LINE
REDUCTION GEARS

TAKING DELIVERY OF BOAT

(*Continued from page 32*)

Hank brought me out of this dream when he suggested that we prepare to cast off, as he had a great deal to do, and wished to see the fun before returning to the office. As there was no very good reason to deprive him of his wish, we prepared to leave.

Where were we to place the dinghy? I thought it would be best over the stern. We hauled it out, and in so doing scarred the new varnish, only to find that it could not be accommodated there. "Why not tow it as everyone else does," suggested Hank. Over-board the dinghy went, as we decided to follow Hank's advice. There seemed now nothing more to do but leave. Bill and Hank loosened the lines, as I nervously pressed the button and the engine started. As I was about to cast off and move away Hank shouted from the fifty-footer, "Wait for the water to come out of the exhaust before you use the engine." We waited, I hanging over the stern, anxious to see the water. No, it was no joke. It finally did come, so I returned to the wheel.

"Cast off, mate," this addressed to Bill.

I pulled the clutch into reverse, and slowly backed away toward a large pile in the middle of the basin. Somehow I became hypnotized by this pile and went for it faster and faster. Before reaching it I recalled being in reverse, so threw the clutch ahead, and stalled the motor. We didn't hit the pile. No, we had backed into the mud surrounding it. I tried to start the motor, but it wouldn't. Naturally not, as it was still in gear. (I must admit at this point that things seemed a bit complicated to me.) I placed the clutch in neutral, pressed the starting button, and the engine seemed only too happy to be going again. Cautiously pushing the clutch ahead, we slowly dragged ourselves from the mud, and gaining headway moved toward the entrance to the basin. As we approached the gate, there was Hank laughing himself to pieces. No one certainly could blame him, as we must have appeared a very novice crew, to so old a salt as Hank.

Going through the gate, Hank leaning over the edge, his hands made into a small megaphone shouted—"Be sure to go out around that buoy, then under the draw arch of the bridge, and then straight for the light-house."

Two hours later we arrived safely in the Englewood Basin. The many happy indelible memories and laughs we had during this trip up, will remain with us always.

A NEW FAST CRUISER

A. M. L. DuPont, Esq., of Wilmington, Delaware, has recently ordered a 74 foot twin-screw cruiser from plans of A. S. Reed, Jr. It is being built by the Marine Construction Company of Wilmington, Delaware, for launching this spring, and is powered with a pair of 175 H.P. Hall-Scott Motors and equipped with 3:1 reduction gears which drive 36 inch propellors. A speed of sixteen miles an hour is expected. The accommodations include a large owner's stateroom, four single berths for guests and ample crews' quarters.

DODGE EXPANDS ORGANIZATION

The Horace E. Dodge Boat and Plane Corp., of New York, Detroit and Newport News, Va., announces the appointment as service manager of E. Earl Lothrop, formerly New England sales representative, under the supervision of Kenneth M. Smith, director of sales. Mr. Lothrop, a Dartmouth graduate, with considerable experience in automobile and motor boat selling, will handle all matters of distribution and sales service with all distributors and dealers and all owners who have direct contact with national sales headquarters at New York.

Mr. Lothrop's place as New England sales representative has been taken by John L. MacCloskey, formerly factory representative out of Detroit for the Chrysler Corporation. Mr. MacCloskey, who attended Columbia University, New York University and the University of Louisville, has had much experience in research and analytical work for General Motors, Chevrolet and W. C. Durant. He was one of the first flyers in the United States, having become an aviator in 1910. During the war he was an aviation instructor for the United States Army.

The company also announces the appointment of Jay Clark III, as factory service manager at the new $2,000,000 Dodge plant at Newport News, Va., where he will work under direct supervision of William M. Horn, general manager. Mr. Clark, a Cornell graduate, was formerly with the Crumpton & Knowles Loom Works, Worcester, Mass., in the production division. For the past two months he has been working in the Lycoming motor and Auburn automobile factories in order to gain first-hand knowledge of automobile production methods and, more especially, the production of Lycoming motors with which all Dodge craft are equipped.

Advertising index will be found on 3rd last page.

Chrysler MARINE ENGINES

CHRYSLER MOTORS PRODUCT

THE MAJESTIC

8-cylinder—3½" bore x 5" stroke

High Duty—130-150 H. P. at 2400-3200 R. P. M. or 1200-1600 R. P. M. on Propeller Shaft with Reduction Gear.

THE IMPERIAL

6-cylinder—3⅝" bore x 5" stroke

Medium Duty—40-65 H. P. at 1000-1600 R. P. M. High Duty—65-125 H. P. at 1600 to 3200 R. P. M. or 800-1600 R. P. M. on Propeller Shaft with Reduction Gear.

THE ROYAL

6-cylinder—3¼" bore x 5" stroke

Medium Duty—30-50 H. P. at 1000-1600 R. P. M. or 500-800 R. P. M. on Propeller Shaft with Reduction Gear. High Duty—50-82 H. P. at 1600-2800 R. P. M.

THE CROWN

6-cylinder—3⅛" bore x 4⅛" stroke

High Duty—75 H. P. at 3200 R. P. M.

The goal toward which the Chrysler Marine Engine Division has been striving since its inception three years ago now has been attained. Chrysler now offers a complete line of marine engines—suited to the requirements of any boat—from runabouts as small as 18 feet to palatial cruisers as large as 75 feet in length. The recent addition of the new Crown and Majestic not only rounds out the Chrysler line, but it has made possible important production economies, which are being passed on to the motor boat fraternity in the form of reduced prices.

For further information, address Marine Engine Division, Chrysler Corporation, Detroit, Michigan

DISTRIBUTORS

BOARDMAN & FLOWER
San Francisco, Cal.

SEATTLE MARINE SUPPLY CO.
Seattle, Washington

YACHT & MOTOR SALES CORPORATION
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New York City

WHEELER SHIPYARD
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ROY M. BREWSTER
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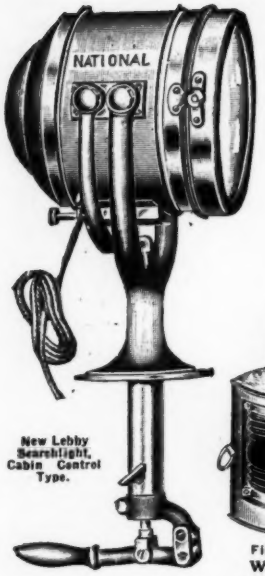


New Lebby Searchlight, Cabin Control Type.

Fig. 813

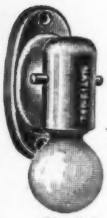


Fig. 810

Fig. 498

Fig. 5010

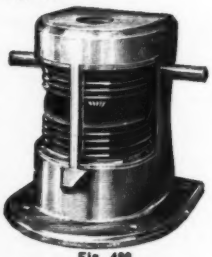


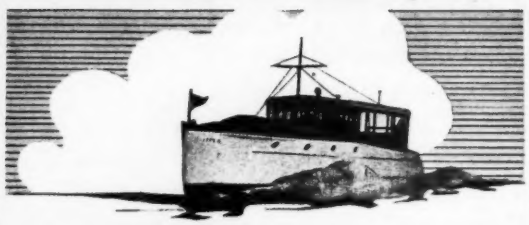
Fig. 499
U. S. Pat. No. 1638544

We manufacture a complete line of "Poweray" and "Lebby" Searchlights, running lights and cabin fixtures, outboard specialties and marine type electric house fixtures. Ask for National Marine products at your dealer. Look for the trade mark.

Write for circular to Dept. M.

HUCKINS
FAIRFORM FLYERS
Built by Huckins Yacht Corp., Jacksonville, Florida, are National Marine Lamp equipped.

The NATIONAL MARINE LAMP COMPANY
FORESTVILLE, CONN.



LUXURIOUS . . . . .

are the appointments of the distinctive Whitney custom built, standard priced cruisers; yet, they retain the sturdiness that insures fast, safe, economic transportation anywhere anytime.

The "31," "35," and "41," complete to the last detail will prove a revelation in construction and design well worth your consideration.

Write for complete details.

DEPT. K

Whitney
WOODCRAFT CORPORATION
EAST HARTFORD CONN.

YARD AND SHOP

(*Continued from page* 198)

ALBANY RACE FINISH AT COLONIAL Y. C.

As in previous years, the Colonial Yacht Club will offer its shore station at 152nd Street and the Hudson River as the finish line for the annual Albany-New York race, according to William M. Eldridge, commodore of the Colonial. The offer, made to the directors of the Middle Atlantic Outboard Association assures the same course for the race as was used in previous years.

The marathon, to be held April 26, will also have the cooperation of the Albany Yacht Club for starting the boats and the Poughkeepsie Yacht Club for checking the craft.

In the amateur division, the principal prize will be the trophy presented to the Middle Atlantic Outboard Association by The Yacht Motor Club of France and in the professional class, the prize will be a cash award of $500. In addition, single prizes will be offered for first, second and third places in Classes B, C, D and E of Division II. A prize will also be offered for the small inboard runabouts, entered in the Albany-New York race this year, for the first time.

NIAGARA APPOINTING NEW AGENTS

Machinery Exporters, Ltd., 465 California St., San Francisco, Cal., Mr. J. M. Tees, president, have just been appointed by the Niagara Motors Corporation of Dunkirk, N. Y., as exclusive representatives for the complete line of Niagara Eights and Fours on the Pacific Coast and the representation of these popular new 1930 models are to be represented by Motor Boat & Engine Service, Navy Pier, Chicago, Ill.

These two important agencies have been closed in addition to the appointment of many other agents throughout the world.

The Niagara line will maintain a permanent exhibit at the Motor Boat Mart, Navy Pier, Chicago, Ill., under the direction of Andrew Youngberg.

Arrangements have already been completed for displaying the new light cylinder supercharged and standard models at the Pacific Motor Boat Show.

TAMING THE OCEAN

Those who are familiar with the rocky coast of northern Massachusetts will be interested to learn of the solution of a difficult problem which has long confronted Harmon P. Elliott, Pres. of the Elliott Addressing Machine Co., at his summer estate, Nahant, Mass. Mr. Elliott is an ardent enthusiast of motor-boating and refused to be licked by one of the most hazardous conditions imaginable. In front of his estate, leading to the ocean, the shore is lined with high peaks of jagged rocks. These peaks are not only confined to the shore, but stick out of the ocean as well for half a mile in front.

Mr. Elliott has contracted with the Walsh-Bugbee Co., builders of Artistic Steel Floats & Docks, to build a long steel approach to the ocean, over and alongside this rocky contour, to enable him to get to a place where he intends to effect a landing for his 62 foot cruiser. The approach is started on pilasters fastened to the solid rock with reinforced bars drilled into the rock. Structural steel is build up from the pilasters to a sectional and detachable flooring. The sides of the approach are equipped with solid marine stanchions and steel highway guards. The ocean end of the approach is 15 feet above the low tide water and is equipped with a 3,800 pounds counter-balanced ramp, which requires another 4,000 pounds to effect a balance. The ramp runs down to a long narrow artistic steel float. The counter-balance keeps the weight of the ramp off the float to prevent pounding in this, sometimes very rough, wide open ocean.

The extra heavy steel float has a bow on the narrow outside end and is pointed in the direction from which they are most likely to get the heaviest storms. The float is moored over a rocky bottom with four mushroom anchors, each of which weighs 2,000 pounds, on 150 foot heavy chains, or as long as is necessary to get a grip on the bottom. Some of the natives shake their heads and predict that Mr. Elliott will wake up some morning and find his float on the rocks, but neither he nor the Walsh-Bugbee Co. are worrying about that. Mr. Elliott believes he has licked his condition.

DECORATION DAY AT WORCESTER

Lake Quinsigamund will be again the scene of outboard racing. Drivers in the east will assemble at this picturesque lake over the Decoration Day holiday for the annual regatta. As in former years, time trials for records in all classes will be conducted on the first day of the regatta, while the second day will give an opportunity for competition among the best drivers in all classes of events. The new 1930 Outboard Racing Rules will be followed in all particulars. Further details and entry blanks will be distributed in due time, and as usual Frank Wigglesworth of Boston will be general chairman of the racing meet.

(*Continued on page* 204)

Advertising index will be found on 3rd last page

CHICAGO NATIONAL
MOTOR BOAT SHOW
April 25th to May 3rd
140,000 Square Feet of
MARINE DISPLAYS

Boats, Motors, Accessories for every Purpose

World's Greatest Marine Exhibit

Permanent All-Year Exhibit
at
CHICAGO NAVY PIER

CRUISERS—COMMUTERS—RUNABOUTS
OUTBOARD BOATS—SAIL BOATS
MARINE ENGINES—OUTBOARD MOTORS

Special Features During National Show Week

Including Demonstrations in the Water

MANUFACTURERS: *Write today for full particulars on either permanent exhibit or for space during Chicago National Show Week*

Sanctioned by National Association of Engine and Boat Manufacturers

MOTOR BOAT MART

NAVY PIER CHICAGO ILLINOIS

What boatmen have been waiting for!

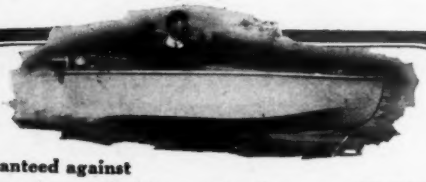
The DEBASCO knockabout and yacht tender

All mahogany, double planked and strongly built. Length 18 ft. Beam 62 in. Freeboard 27 in. Universal 4 cyl. 45 h.p. motor. Speed 30 miles an hour. Nickel silver hardware. Self starter. Electric lights. Heavily padded Russaloid cushions with springs.

DEBASCO BOAT WORKS, Inc.

Philadelphia office — N. E. Cor. Jasper & Willard Sts.

Plant — Leesburg, N. J.



Guaranteed against

Blistering, Flaking, Peeling or "ROT"!

Add to superior design and construction a finish which is guaranteed not to flake, peel, blister or "burn" and you have an idea of the 1930 PENN YAN Dinghies! Half the weight of wooden boats after a few weeks of service . . . faster, easier to handle and smoother under way . . . require no care, no caulking, and never leak! Whether it's a moto-dinghy, sailing dinghy or rowing dinghy, if it's made by PENN YAN it is the finest dinghy value offered today. Write for our illustrated folders on PENN YAN Dinghies and PENN YAN Racing Craft.

PENN YAN BOAT CO., Inc.

144 Water Street — Penn Yan, N. Y.

PENN YAN DINGHIES

ELECTRIC LIGHTS ANYWHERE

Electric Light Your Boat, Cottage, Camp or Home! Onan Electric Light Plant $139

110 volt, uses no batteries or water, portable. Install it yourself and enjoy all those home conveniences of electricity away from home.

OTHER MODELS

Models for marine and commercial use. D.C. or A.C., 350 to 2000 watt, also 32 volt plants. Write for our home wiring chart or boat installation suggestion. Describe the place you want to light—there is a model to suit.

D. W. Onan & Sons

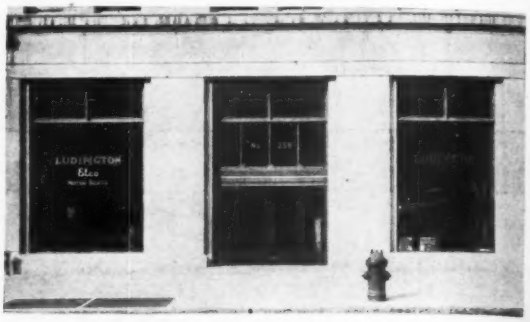
[illegible] Royalston Ave., Minneapolis, Minn.

YARD AND SHOP

(*Continued from page 202*)

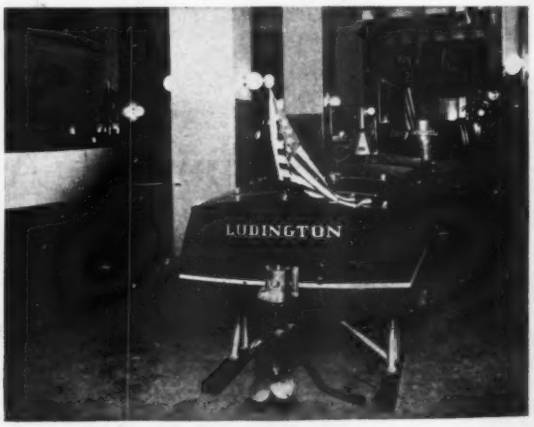
PORT LUDINGTON IN PHILADELPHIA

Port Ludington, the permanent Philadelphia showroom of the Boat Division of Ludington Aircraft, Inc., Atlantic Building, Philadelphia, was formally opened with a private showing by invitation on Friday evening, March 7, and a public opening on Saturday, March 8. Ludington, in addition to showing their own inboard runabouts and racing craft, are the sales representatives for Elco cruisers and Chris-Craft in Philadelphia.



The new Port Ludington in Philadelphia. A permanent display of runabouts, cruisers and Travelair planes

The showroom occupies the entire north ground floor of the Atlantic Building, 258 S. Broad Street. The floor plan is admirably suited for the display of the Elco Marinette and Veedette, 27- and 30-foot cruisers; the Model 103, 24-foot Chris-Craft runabout, the Ludington Sportship and Sportship Senior, 17-foot inboard runabouts with outboard drive, and the Ludington hydros—the Lightning, Rocket, and Flash. In addition to this complete showing of Elco, Chris-Craft, and Ludington boats, a D. H. Gypsy Moth Biplane with folding wings is on display. The Ludington Philadelphia Flying Service, operators of the Philadelphia Airport and Central Airport, Camden, N. J., occupy a portion of the showroom with a ticket office for airplane transportation.



An interior of the new Ludington show room showing the generous display of boats

The types of boats on display will appeal to all classes of people, as the price range from the Elco cruisers to the Chris-Craft and Ludington runabouts and Ludington racing boats is wide. Those who require solid boating comfort for extended cruises will find an Elco to suit their taste. The Chris-Craft line will appeal to those where elegance and speed is a factor, and the Ludington inboard runabouts, trim, sturdy, fast and comfortable, will bring boating pleasure to thousands of those of more moderate means. Ludington racing craft are of new design and construction to comply with the new N. O. A. requirements and will appeal to those who are planning to win racing cups in 1930.

A convenient location has been selected on the Delaware River and demonstrations of all types of boats on display can be arranged by appointment.

(*Continued on page 206*)

Advertising index will be found on 3rd last page

ORION

Orion (right), largest privately owned yacht afloat. Built at Kiel, Germany, she measures 330 feet with a beam of 46 feet—displacement 3400 tons.

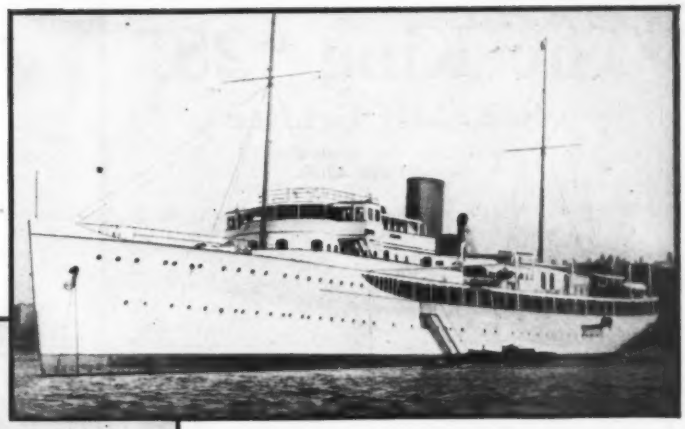


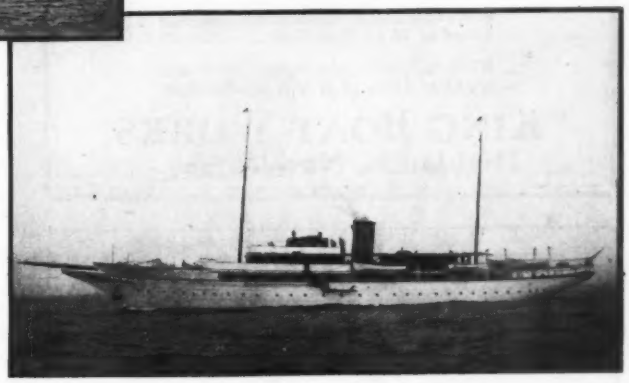
Photo Edwin Levick, New York

HI-ESMARO

Hi-Esmaro (below), H. E. Manville's palatial new motor yacht is the biggest American-built yacht. She is 267 feet in length with a displacement of 1250 tons.

NOURMAHAL

Vincent Astor's *Nourmahal* (above), largest yacht previously built at Kiel. She is 263 feet long and of 1339 tons.



Three largest private yachts lubricated with Gargoyle Marine Oils

Among the 65% of the world's Diesel-powered vessels lubricated with Gargoyle Marine Oils are numbered the majority of the most famous privately owned yachts.

The dependable performance and practical engine-room economy of these high-quality lubricants appeal alike to the commercial owner and the yachtsman. Experienced engineers have found through years of consistent use that Gargoyle Marine Oils:

furnish the best insurance against untimely breakdowns, costly repairs and inconvenience on cruise;
conserve horsepower;
increase cruising radius;
reduce fuel and oil consumption;
lengthen the life of propelling machinery.

Stocks of Gargoyle Marine Oils are maintained in more than 300 of the world's leading ports. Cruising yachtsmen will find in every one of these ports a Vacuum Oil Company representative thoroughly acquainted with every type of marine engine, and ready at all times to offer expert aid in solving any lubricating problem.

New Diesel Booklet

Our authoritative new treatise, "Correct Lubrication—Motorships", covers lubrication requirements in every type of modern Diesel vessel. We will be glad to send you a copy free of charge. Address your request to the Vacuum Oil Company, Marine Sales Department *B-4*, 61 Broadway, New York City.

GARGOYLE

Marine Oils

For gasoline engines—Mobiloil

Mobiloil is the standard of lubricating quality for all boats powered with gasoline engines. In the outboard field a glance at the records made with Mobiloil indicates the results obtained everywhere with this remarkable new oil.

CLASS
A— 2 out of 4 records
B—12 out of 13 records
C—11 out of 13 records
D— 9 out of 10 records

VACUUM OIL COMPANY

New York City, U. S. A. • Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world.

GARGOYLE

Mobiloil

The King "28"

Sea Skiff Cruiser

Built by the originators of fast sea skiffs

CONSTRUCTED under the King sea skiff patents, this 28 footer is a good example of the ruggedness and seaworthiness built into all King Sea Skiffs.

With the finest of workmanship, lap-strake construction, all copper and brass fastenings, ribs of steam bent white oak, heavy spruce bottoms and all mahogany trim, this cruiser stands alone in value and performance.

With full cabin accommodations and speed of 16 to 18 M.M.R.H.—$2995.00

With full cabin accommodations and speed of 22 to 25 M.M.R.H.—$3350.00

KING BOAT WORKS
Highlands, New Jersey

PETERSON SPEED PROPELLERS

Increase the Speed of Your Boat by Using a Peterson Propeller

Made in two and three blades.

Write today for circular and prices

DEALERS:

PAULS BOAT SUPPLY — MIAMI, FLA.
GRAY-ALDRICH CO. — BOSTON, MASS.

O. P. PETERSON CO.
60-66 UNION STREET
PORTLAND, ME.

DE LUXE YACHT LOG

Size 8" x 11"
Price $12.50

For Pleasure Entries.

Keep a record with notes, sketches or photographs, the interesting happenings of cruises, fishing parties or races.

First Of Its Kind

No other log like it. Printed on heavy art paper, bound in real calf. Cover embossed with your club burgee and house flag, in gold leaf and oil colors. An artistic, durable and practical addition to your library. Grows more interesting as records accumulate.

PUBLISHED YEARLY—Be sure and send the name of your boat, yacht club, and design of your house flag in colors, with your order.

Marine Publishing Co., Box 265, Beverly Hills, Cal.

YARD AND SHOP

(*Continued from page* 204)

NATIONAL ASSOCIATION ELECTS DIRECTORS

At the annual meeting of the National Association of Engine and Boat Manufacturers held at Grand Central Palace, Friday, January 24, 1930, the following directors were elected to serve for three years: Henry H. Brautigam, President, The Bridgeport Motor Company, Inc.; Charles A. Criqui, President, Sterling Engine Company; George W. Codrington, President, Winton Engine Company; Warren Ripple, President, Johnson Motor Company, and Henry R. Sutphen, Vice-President, The Elco Works.

The original all-mahogany boat—a canoe hewn from a single log by the Carib Indians

"ALL MAHOGANY"

In this day and age of claims and counterclaims of all mahogany and mahogany throughout, the accompanying picture of a canoe hewn from a solid log of mahogany is of interest. This canoe is the property of the Universal Motor Company, who obtained it from the Carib Indians of British Honduras. The natives of this part of Central America have used canoes of this type for water transportation from times immemorial.

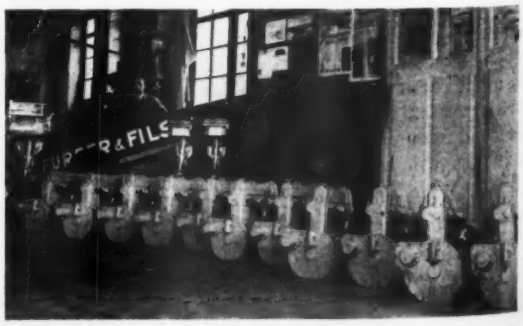
The first job in making a canoe is the selection of the proper mahogany tree. A section of the right length, thickness, and structure is cut off and the hollowing-out process is then begun. This is done with the aid of fire. A fire is built on top of the log and it is allowed to eat its way into the log. Great care must be taken to prevent the fire from removing too much wood from any one point. After fire has done its part of the work the hollowing-out process is continued with the aid of an ax, adz, saw, and with a native tool—a sort of rounded draw shave.

The canoe is then shaped, inside and out, with the aid of these same tools. After the finishing is done, the canoe is filled with water, and hot stones are dropped into it until the wood becomes pliable. Shapers and spreaders are then inserted and left in position until the canoe is thoroughly dried out and seasoned.

The side walls of the canoe are approximately 2 to 3 inches in thickness, while the bottom is between 4 and 5 inches. The length varies from 14 feet up to 35 feet and 40 feet.

Canoes of this type are used extensively by the natives for both river and open-sea navigation. The natives are expert boatmen and handle them safely even in quite severe storms. The shape, of course, helps greatly in handling during rough weather. They may be propelled with oars or paddles, small sails, or gasoline power. In many instances Universal Flexifour marine motors are installed with a considerable degree of success.

(*Continued on page* 208)



Van Blerick Junior motors are shipped in large quantities to foreign countries. Here are eleven in stock in the Swiss show room operated by Furrer & Fils at Lausanne

Advertising index will be found on 3rd last page

When overhauling
be sure to use Laminum

What It Is

LAMINUM is the material for shims. Thin layers of shim brass which you peel off with a knife to the right thickness. Smooth surface. Always accurate. For all marine made engines. Obtainable in strips or made to order.

What It Does

LAMINUM makes a perfect shim and a beautiful adjustment job. Solid as a solid shim. Enables you to key up bearings with exact precision. Helps to preserve oil film. Also used for other purposes, where fine machine adjustments are necessary.

Why You Should Use It

LAMINUM is used by leading marine and automotive engine builders because of its efficiency. Saves time, labor and costs. Has all the advantages of a solid shim with additional valuable features.

Write Us For Free Sample and Full Particulars. Ask Your Dealer.

LAMINATED SHIM COMPANY, Inc. **14th St., LONG ISLAND CITY, N. Y.**

Detroit—Chas. S. Monson, Curtis Bldg.

LAMINUM

GENUINE MAHOGANY

Adds Strength to Motor Boats

**BENDING STRENGTH—
SHEARING STRENGTH
and SELLING STRENGTH!**

What a Strong Selling Point when the Manufacturer Can Truthfully Say:

"This Boat Is Constructed of Genuine Mahogany"

THE MENGEL COMPANY
INCORPORATED
LOUISVILLE, KENTUCKY

STORAGE BATTERIES

Willard

For MOTOR BOATS

Willard Storage Battery Co., Cleveland, Ohio

DISTRICT SALES OFFICES:

Atlanta, Ga. 1302 Citizens & Southern Bank Bldg.
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Cleveland, Ohio 1920 Scranton Rd.
Dallas, Texas 1302-3 Dallas National Bank Bldg.
Detroit, Mich. 5946-54 Cass Ave.
Kansas City, Mo. 301-302 Midland Building
New York City, N. Y. 551 Fifth Avenue
Philadelphia, Pa. 3619 Walnut St.
San Francisco, Calif. 480 Second St.

Kroh De Luxe Top has opening aft giving easy entrance and exit

KROH TOPS and BOAT CUSHIONS

KROH one-man tops are designed especially for boats of the finest materials—waterproof, rust proof and sun proof. They are used on such leading boats as Chris-Craft, Hacker Dolphin and Gar Wood runabouts. Standard, de luxe and custom models. Write for illustrated folder.

Also Manufacturers of Spray Hoods, Life Preservers, Cushions and Pillows.

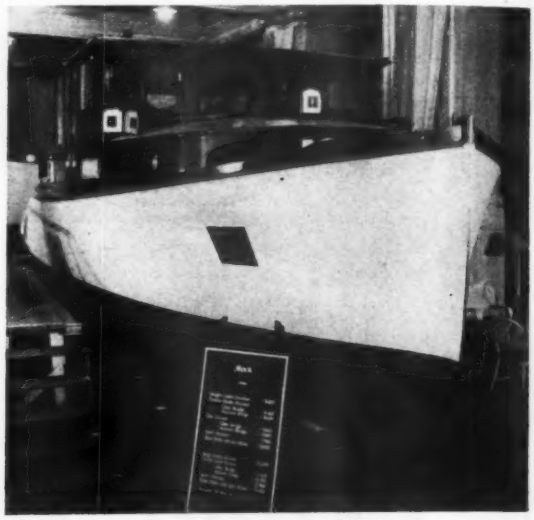
C. Z. Kroh Mfg. Co., 108 East Woodruff Ave., Toledo, O.

YARD AND SHOP

(*Continued from page* 206)

MATTHEWS SHOWROOM OPENED IN HOUSTON

R. Sealy & Company of Galveston, Texas, who represent the Matthews line of stock 38 and 46 foot cruisers, have now received the Matthews franchise covering Houston, Texas. To that end they are opening up a large showroom at 3206 Main Street, Houston, where the new Matthews models are already on display. H. W. McCormick, who for several years has been connected with the insurance business of Houston, has been appointed manager of this office, and it is his duty to build a dealer organization after the opening of the new store under the Sebo Boat Company for important key towns in Texas.



A bow view of the 38-foot double-cabin enclosed bridge Matthews, taken at the New York show

DODGE PLACES HUGE LUMBER ORDERS

An initial order of 1,000,000 feet of African mahogany, to be followed within sixty days by a similar order already arranged, has been placed by the Horace E. Dodge Boat and Plane Corporation of New York, Detroit and Newport News, Va., with Ichabod T. Williams and Sons of New York, and Palmer & Parker of Boston, according to announcement by Dodge officials today. Deliveries, upon a pre-arranged schedule, are already being made and additional orders will be placed as required for the Dodge program of 4,200 mahogany runabouts during 1930. Orders have also been placed and deliveries started on oak and other woods used in the construction of Dodge boats.

The wood is being sent to the Detroit plant where 400 men are working in three eight-hour shifts daily and to Newport News where the new $2,000,000 quantity-production Dodge plant will open for operation March 13, with a schedule of over 700 boats per month.

The Dodge company also announces that complete deliveries of Lycoming engines, with which all Dodge craft are equipped, are being received in exact accordance with the rigid schedule previously announced. Since January first Dodge has appointed 70 distributors and dealers in this country and abroad.

PERKO STANDARD ON MANY RUNABOUTS

The improved features of Perko marine lights are so practical and convenient that they have been selected as standard equipment by a number of leading runabout builders, including Chris Craft, Dawn, Dodge, Dart, Hackercraft, Mathews, Chase-Emerson, Boyd Martin, and others. Among the many improvements that have made the Perko line so popular is the patented refueling device whereby the lamp in running lights permanently fastened to the deck may be cleaned or quickly changed without unscrewing the fixture. This feature, incorporated in a heavy cast bronze highly polished light of unusually graceful design makes a very attractive and serviceable fixture. A 68-page catalog, sent free on request, describes this and other Perko lights and equipment specialties.

(*Continued on page* 210)

Advertising index will be found on 3rd last page

...not an isolated section of the country

. . . but the whole world comes in with amazing clarity on

THE NEW LEUTZ SHORT WAVE RECEIVER

Engineered and built only for short waves . . . . not an adapted set

NOW there is no need for you to wait for foreign programs to be rebroadcast. Hear the program direct, via short waves!

This new Leutz set is built *only* for short wave work. It is so selective and so sensitive that it sets an entirely new standard in distant reception. New and original features are included which overcome the early difficulties encountered in such work. It is reliable, easy to operate, and ideal for use on motor boats and yachts as well as in the home.

Descriptive literature gives the complete details of this amazing set. Write now for information.

C. R. LEUTZ, INCORPORATED

ALTOONA, PA., U. S. A.

Cables: Experinfo, N. Y.

Sales Offices in New York, Los Angeles and Paris

For the Discriminating Yachtsman

"Gold Medal" Yacht Chairs were designed to meet the requirements of the modern cruiser. The trim neatness of appearance makes these chairs adaptable to any surroundings. They are strongly built. Frames are of seasoned hardwood, stained a light mahogany and varnished. The covers are closely woven, double-filled canvas. All hardware is of heavy gauge brass. The chairs fold compactly for stowage. Write for illustrated folder.

Chair No. 35-Y

Has set-in rubber feet to eliminate marring or slipping. This type chair also furnished in red or green lacquer with colored covers for home and club use.

GOLD MEDAL FOLDING FURNITURE CO.
1754D Packard Ave.,
Racine, Wis.

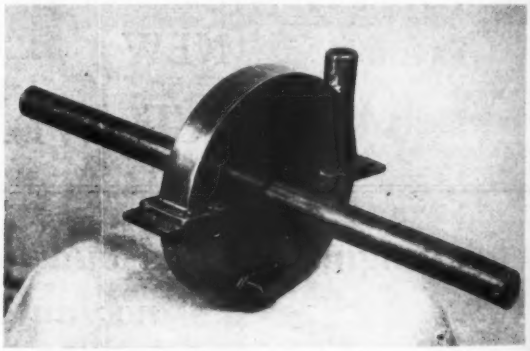
YARD AND SHOP

(*Continued from page* 208)

The attractive show room of Port Elco just opened in Boston, in charge of Gleason Buckley

A PROPELLER SHAFT PUMP

The recent New York Boat Show saw the introduction by the Columbian Bronze Corporation of a new bearingless bilge pump designed to be driven from the propeller shaft, which is certain to attract a great deal of interest. It was received most enthusiastically at the Show and no doubt will be used before a great while as stock equipment on many standardized craft. A notable feature about the pump is the fact that it can be applied to the propeller shaft without disturbing the existing installation in any manner. The vanes are made in two halves; the lower pump housing may be slipped under the shaft and the upper half then placed in position and the whole pump located on brackets or a small bed plate so that it in no way touches the propeller shaft or vanes. The efficiency, as may well be appreciated, is remarkable. All parts are made of bronze and there is absolutely no wear and no need for lubrication.



Columbian has designed a new bearingless bilge pump, driven from the propeller shaft

(*Continued on page* 214)

CAST OFF IN THIS BOAT AND UNROLL A WIDE, WHITE WAKE

Here's a stout boat—this "Old Town." She rides the water like a sea-gull—cuts along like a shark. Never shivers or vibrates—she's built extra-rigid. The heavy, non-leak canvas has no seams to open up, and therefore won't ever need caulking. Ideal for heavy loads, but wonderfully light and well-balanced.

Free catalog shows big, fast, seaworthy, all-wood, outboard family boats; canvas-covered, square-stern boats with sponsons; rowboats; dinghies; speedy step-planes; and all types of canoes. Write. Old Town Canoe Co., 184 Middle Street, Old Town, Maine.

"Old Town Boats"

VIKING Sport Fisherman SEA SKIFFS

24, 26 and 30 Foot Models

SPEEDS, 14 M.P.H. AND UP ..... $2,250 AND UP

Dual steering controls and cabin seating ten. Staunch construction throughout. Send today for full particulars on these fine sea-boats for rough waters.

Visit Our Showroom

The place to buy your boat—where demonstrations are given in the water.

Dealers for

Aco Seaboats, Boyd-Martin and Dee-Wite Runabouts
Richardson 29-ft. and Staples Johnson 34-ft. Cruisers

Also Large List of Used Cruisers and Runabouts

Installment Terms — Open Sundays

TOMS RIVER BOAT WORKS, TOMS RIVER, NEW JERSEY

Forty Years a Boat Yard

Adjacent to Atlantic City Boulevard **Telephone: 180**

HI-DUTY *Direct Connected* UNIT

Available for use as bilge pump, fuel pump, or as an automatic water pressure system to supply running water on your boat. Built in four sizes and may be had with 12, 32, or 110 volt motor. Very quiet in operation.

Used by leading Boat Builders.

Manufactured by the Makers of the Aqua-Pressor
Write today for literature and prices.

BOWLER, HOLMES & HECKER CO.
259 GREENWICH STREET **NEW YORK, N. Y.**

Advertising index will be found on 3rd last page

The World's "Winner"

Illustrated is the Improved Sands Pump Water Closet known for many years as the "Winner" . . . . our fastest-selling fixture. The "Winner" is standard equipment on most of the finest stock cruisers . . . . marine architects specify it and dealers recommend it everywhere. Unquestionably more pleasure boats are equipped with "Winner" Closets than with any other make or model in the world.

Real merit is responsible for the great popularity of the Sands "Winner." It has been improved from time to time and now embodies desirable features never before offered at the price.

This low price for the "Winner" is no indication of its real value. Heretofore this closet has sold at the price of other models of equal quality, but the exceptional demand for this favorite has enabled us to reduce our costs and we pass the saving along to you.

THE IMPROVED "WINNER"

- All bronze combined supply and waste pump.
- Cast malleable bronze operating lever with cellu-white wood grip.
- Improved square-back seat and cover with extra heavy nickel plated brass bar type hinge.
- Pump with natural bronze finish, fitted with polished trimmings.
- Sands back-water check valve.
- Pump furnished facing right or left hand side.
- Height, regulation 15 inches—no platform required.
- Bowl of best quality two-fired vitreous china.

SANDS "Winner" NOW $39.75

with Oak or Mahogany Finished Seat and Cover.

With Cellu-white Pump, Seat and Cover, as illustrated . . . $45.75

"Winner" Closet on the new 38-foot A.C.F. Commuter. Sands Plumbing Fixtures are standard equipment on all A.C.F. boats.

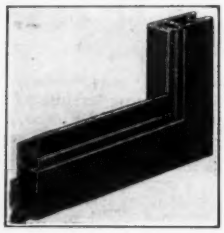
This Sands Fixture is fully guaranteed, and its great popularity is your assurance of satisfaction.

Catalog of other Sands Plumbing Fixtures mailed free on request

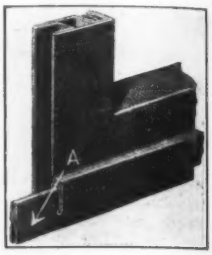
A. B. SANDS & SON CO.
20-24 Vesey St., New York City

Order from your Nearest Distributor

New York City, E. J. Willis Company, W. & J. Tiebout, The Durkee Company; Boston, Mass., The Wm. H. Gallison Co.; New Bedford, Mass.; C. E. Beckman Company; Philadelphia, Pa., Marine Equipment & Supply Company; Baltimore, Md., The Wm. H. Whiting Company, James Walker Company; Chicago, Ill., Geo. B. Carpenter & Co.; San Francisco, Cal., Johnson & Joseph Company; Los Angeles, Cal., Smith Sales Company; San Pedro, Cal., Marine Hardware Company, The C. J. Hendry Co.; Seattle, Wash., Pacific Marine Supply Co.; Portland, Oregon, Oregon Marine Fisheries Supply Co.; Toronto, Ont., John Leckie, Limited.



TUCO SCREENS

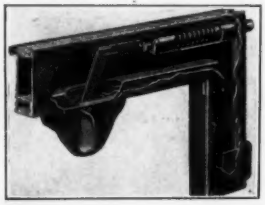


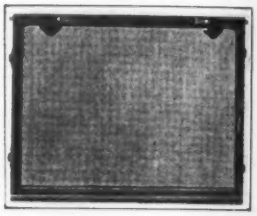
The screen cloth is held in place by means of special split beading.

Weatherstrip may be easily renewed by sliding into grooves.

Enclosed type spring bolt. (Other types are available.)

Both the frame and the screen cloth can be obtained in either bronze or Monel metal.





We can furnish any type of sliding, hinged or stationary screen, and various types of latches and lifts.

TUCO PRODUCTS CORP.
30 CHURCH STREET, NEW YORK

WEST COAST HARBOR DEVELOPMENT

Numerous developments are on foot at various points along the West Coast for the development of existing, and the promotion of new, facilities for yacht harbors, basins and anchorages, for the mooring and protection of pleasure boats and commercial craft. At the present time this very worthy project includes developments in Juneau, Alaska; Oakland, Monterey and San Francisco, California; and Neah Bay, Washington.

At Juneau plans have been drawn for additional motor boat mooring facilities which when completed will provide sufficient accommodations for all motorcraft using the public floats of the Alaskan capital. This work is to be concentrated in a protected area north of the Alaska-Juneau Gold Mine's rock dump breakwater. The necessity for this work is hastened by the expiration this year of a contract entered into by the City of Juneau and the Alaska-Juneau Mining Company. Faced with the necessity of providing new mooring facilities, the City Council and the Executive Committee of the Chamber of Commerce held a conference with Mine officials, the chairman of the Alaska Road Commission and representatives of the Rivers and Harbors Board. The result of the meeting was that the space north of the breakwater will be again available for a motor boat moorage. The new plans for the enlarged moorage include the construction of a new set of floats sufficient for all the boats operating out of Juneau.

At Oakland, California, $50,000 worth of dredging and other improvement work has been undertaken, including the remodelling of the club house and the addition of many new lockers. This work is being undertaken by the Oakland Yacht Club and in the future it will be especially well prepared to care for the needs of its ever-growing membership and at the same time it may well be proud of claiming one of the finest yacht harbors on the coast. It will provide berthing space for 95 large vessels and 20 smaller craft. The entire harbor, including the turning basin, is dredged to a depth of 10 feet at low water. The limits of the harbor will be bulkheaded with substantial piling extending well around the club's property and affording one of the finest berthing spaces on the bay, well protected from the wash of passing boats.

At Neah Bay, Washington, a government-built breakwater is being backed which may within the course of a few years materialize into a reality. The proposal here is to construct a breakwater extending from Waddah Island to the west mainland, a distance of approximately three-quarters of a mile. At the present time Waddah Island offers comparatively little protection from the sea and the proposed breakwater is very urgently needed. It would be of great assistance to American boats which require a convenient harbor for shelter while operating off the northwestern tip of the United States.

For Monterey, California, the House Rivers and Harbors Committee has approved a proposal for a Federal breakwater and included it in the general Rivers and Harbors bill to be considered by Congress this session. In all probability, funds for the jetty will probably be appropriated this year and it is predicted that construction will actually be started within the coming year. The proposal calls for the construction of a sea wall 1,300 feet long to cost approximately $610,000. This will afford protection to the shipping in the harbor and will provide a sheltered haven for pleasure craft and small commercial vessels.

San Francisco contributes to this general development with the announcement that the San Francisco Air and Yacht Terminals, Inc., have let building contracts for the construction of an extensive yacht harbor on the Marina at the foot of Webster and Buchanan Streets. The number of berths in the municipal yacht harbor has been entirely inadequate to meet the demands of boat owners and the new development will be of such proportions that it will be able to take care of present and potential requirements for a long time to come. The salient features of the new development include moorings with private floats; inside storage for small craft with marine railways, ramps, and traveling cranes as well as locker facilities; complete service for all boats, including washing, polishing hardwood and brightwork, engine care, gas and oil service and attendants for mooring service; attendants to care for the boats and put them away; and a comfortable entrance building with restaurant, telephones, observation decks, refreshment tables and news and cigar stands. Boat display rooms will afford prospective purchasers an opportunity for inspecting the latest offerings in pleasure craft.

Advertising index will be found on 3rd last page

Select Your Dee Wite *Now!*

A Small Down Payment Will Insure Delivery When Wanted . . .

Like countless others, you have probably wished you could afford a luxurious all-mahogany motorboat. In the famous Dee Wite line, you can now have the craft of your dreams at any price you choose, with eleven beautiful models from which to select. So great has been public acceptance of these remarkable motorboats, that early selection is advisable to insure delivery when wanted, for even Dee Wite's great production facilities are going to be taxed to the utmost during 1930.

ll Beautiful Models Await Your Inspection

Your local Dee Wite dealer has representative models on display, and complete information on Dee Wite's wonderful 1930 line. To insure the boating joy that only a Dee Wite runabout can bring you and your family, go to him today, and select the model that best meets your needs. A small down payment insures delivery when you wish it; the balance can be taken care of from income, just as you would purchase a car. You will find workmanship, motor power, and equipment here that surpasses your highest expectations. Get your share of the joy of the waterways by seeing your Dee Wite dealer today, and making your selection early.

DWIGHT LUMBER COMPANY

Dept. 54, Boat Division — Detroit, Michigan

Dee Wite

Mail This Coupon for Free Catalog

Dwight Lumber Company, Boat Division, Dept. 54, Detroit, Michigan

Gentlemen: Please send me, without cost or obligation, a copy of your new, illustrated Dee Wite Catalog

Name_____ Address _____

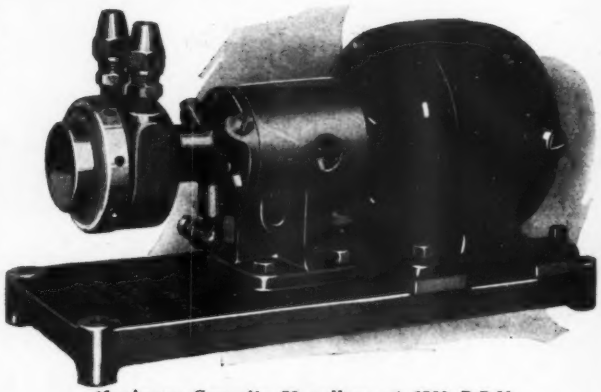
City_____ State _____

BARLOW
ROLLER FUEL PUMP

The Barlow Roller Fuel Pump, as used for equipment on eight well known marine engines, is now available connected to an electric motor for independent installation with gasoline and Diesel motors.

Fuel delivery is instantaneous and automatically controlled according to the requirement of either the largest or smallest motors. A maximum capacity of 70 gallons per hour is sufficient for the largest motor. A quiet running, vibrationless unit, the life of the Barlow pump is equal to that of any motor. An automatic By-Pass eliminates fire risk by making it impossible to flood the carburetor, even with the motor idle and the pump in operation.

A compact, dependable unit, it may be placed wherever most convenient. A folder describing the Barlow Independent Unit will be forwarded on request.



Maximum Capacity 70 gallons at 1750 R.P.M.
Size—12½" x 5½"—Supplied with 12, 32 or 110 volt motors

McCord Radiator & Mfg. Co., Dept. 25, Detroit, Mich.

YARD AND SHOP

(*Continued from page* 210)

THREE ENGLISH CHALLENGERS FOR HARMSWORTH

This year England is offering the boldest bid to regain the Harmsworth trophy that she has made at any time since Gar Wood won it in 1920 at Cowes, on the Solent, and brought it to this country, in the opinion of George Harrison Phelps, vice-commodore of the Detroit Gold Cup Committee and the Yachtsmen's Association of America and commodore of the Detroit Yacht Club on whose course the event is to be held.

Mr. Wood, Commodore Phelps points out, has never been called upon to face more than one challenger, England having had only a single entry in 1921, 1928 and 1929, and France having pinned her faith on a single entry in 1926, giving the United States team with three entries a decided advantage.

Great signifiance is placed by followers of the sport in the entry of Sir Henry O. D. Segrave, now holder of the world's automobile speed record of 231.62 miles per hour made last winter in the Golden Arrow on the sands at Daytona Beach. Rumors that Sir Henry was about to enter recall a statement credited to him that when he thought he had a boat capable of taking the Harmsworth trophy back to England he would enter, not before.

Now rumor is definitely confirmed. J. Lee Barrett, secretary of the Gold Cup committee, has received from F. S. Weber, acting secretary of the Royal Motor Yacht Club word of the official challenge in the form of a letter as follows:

"Sir Henry Segrave has entered his boat Miss England II which he will pilot himself, and I have reason to anticipate that this country will for the first time in the history of the contest be represented as a challenging country with a full team of three boats.

(Signed) F. S. Weber."

Although her name was not mentioned it is known that Miss Marian Barbara Carstairs, who has twice been the challenger, is to be here with two boats, making good her promise made last year that she would return. It is reported that H. Scott Paine, who built Miss England I for Segrave, informed the committee during his recent visit that Miss Carstairs was having her last year's challenger rebuilt and a faster boat constructed and that at the same time Sir Henry was working on Miss England II with which he hopes to regain the trophy for England.

Miss England II is to be a 38-foot hydroplane driven by two Rolls-Royce Schneider Cup engines developing 2,000 horse power each, duplicates of the aircraft engines which last summer established a new airplane speed of 351 miles per hour.

Miss Carstair's entries, Estelle IV and Estelle V, are to be powered with Napier Twelves. Those in Estelle V, it is understood, are to be supercharged.

It is further rumored that H. Scott Paine may also challenge for the Harmsworth. The British team would then consist of the three fastest of the four, but the slowest boat might be held in reserve in case one of the faster three should become disabled in practice, as happened last year.

With six boats of unlimited power churning to foam the waters of the Detroit River the 1930 Regatta certainly promises to furnish plenty of excitement for both competitors and spectators.

WORK BEGUN ON CRAGSTON

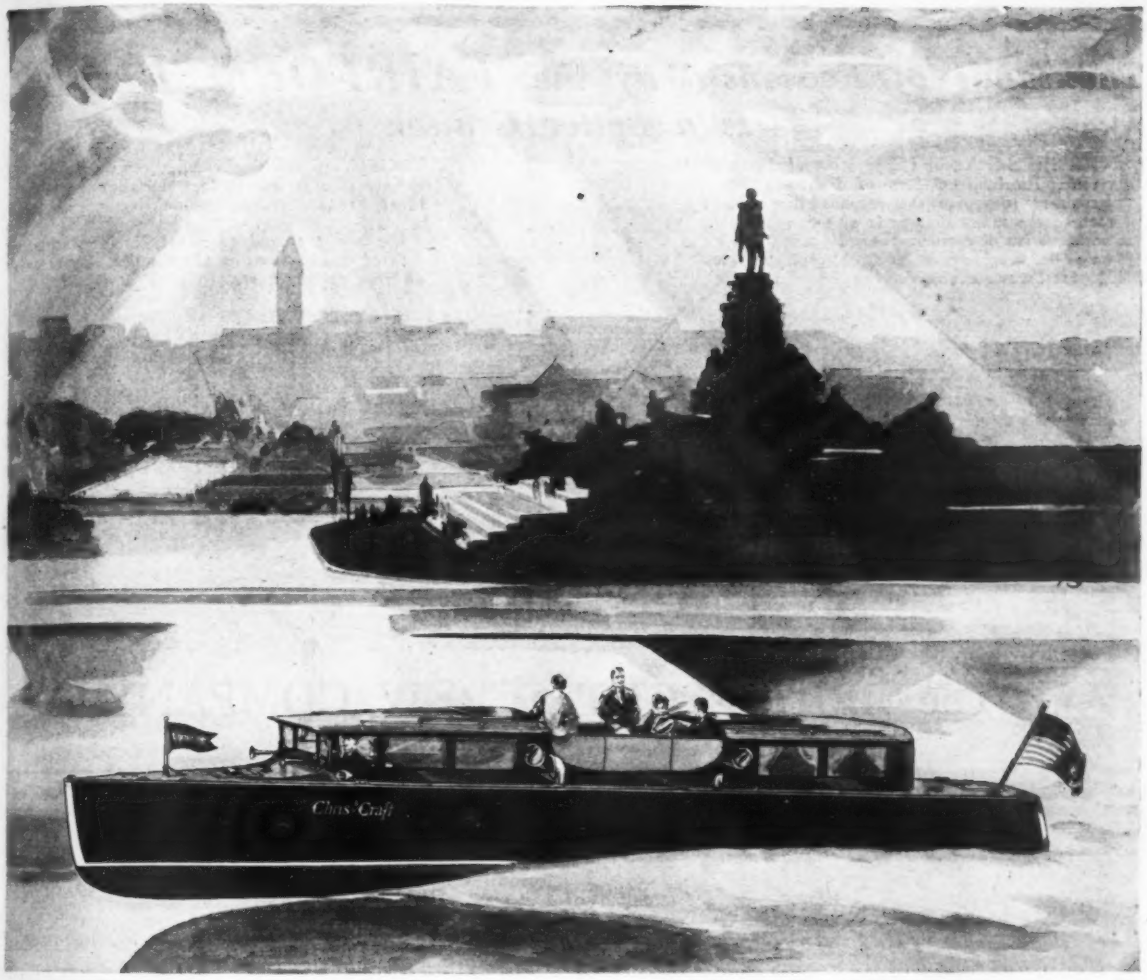
Construction work has just been started on the new yacht and motorboat dock for the Cragston Yacht and Country Club, now being built upon the former J. Pierpont Morgan estate at Cragston-on-Hudson, forty miles from New York City and a few miles south of West Point.

The new dock, which is to be 350 feet in length, will supersede and extend the former Morgan dock of 125 feet, where once the famous Morgan Corsair yacht rode at anchor. At the end of its 350-foot extension into the Hudson, the dock will have a 75-foot addition at right angles, lying parallel to the course of the river, the whole being built upon a right-angle figure. This dock is the first unit in the harbor of the Cragston Yacht and Country Club which, when completed, will accommodate a large number of boats and yachts.

The work of building the rock is under the supervision of Alan Walz, superintendent of the club, and all piling and planking is being cut on the club estate, which has many acres of heavily wooded sections.

(*Continued on page* 216)

Advertising index will be found on 3rd last page



34 ft. Commuting Cruiser, 14 passengers, speed up to 40 M. P. H., two 200 H. P. Marine Motors, $15,000

WHAT a way to entertain—the Chris-Craft way! So fast is Chris-Craft—so safe and so luxurious—it brings within reach the sports and recreations of the whole coast-line! Every Chris-Craft inevitably becomes a social center. Whole parties may go in restful luxury at express train speed to distant regatta, dinner or dance—to sports and recreations everywhere on water ▾ ▾ ▾ With a Chris-Craft you find yourself more frequently invited and more frequently inviting social contacts with really worth-while folks. The boating set is a cheery, happy family, socially active and socially worth-while. Industrial leaders, statesmen and bankers find Chris-Craft the means to secure needed rest and recreation in limited time ▾ ▾ ▾ Let Chris-Craft solve your recreation and entertainment problem.

Every Chris-Craft is water tested before shipment —an innovation in the boat building industry.

Between the nimble twenty-foot runabout and the stately Chris-Craft yacht is the widest range of pleasure craft ever offered. All are luxuriously cushioned, all are seaworthy, safe and fast. All have automobile type controls and starting, lighting and steering devices. Chris-Craft merchants throughout the world will demonstrate and describe the various models. Illustrated catalog may be had by writing

CHRIS SMITH & SONS BOAT CO.
384 Detroit Road - Algonac, Michigan
New York Showrooms: 1 West 52nd St. at 5th Ave.

Chris-Craft

World's Largest Builders of All-Mahogany Motor Boats

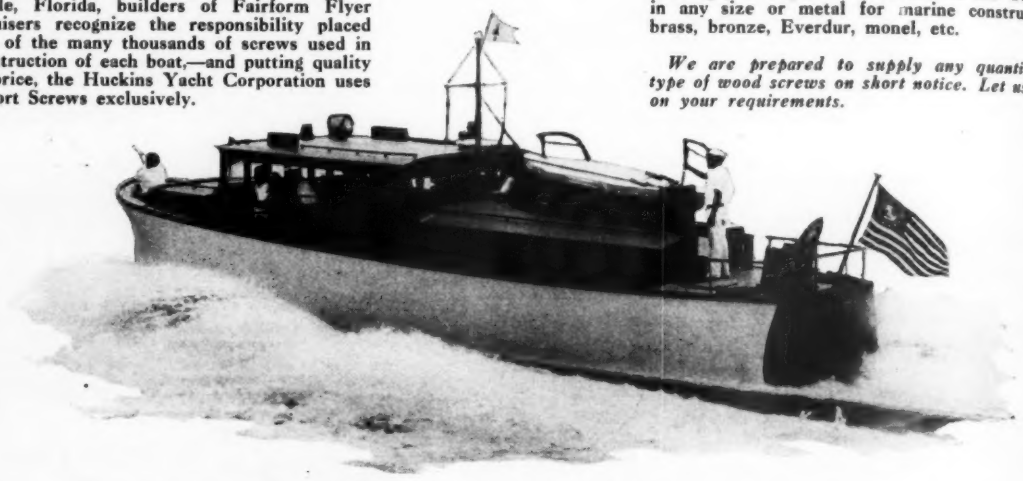
24 Models ▾ Runabouts ▾ Sedans ▾ Commuters ▾ Cruisers ▾ Yachts ▾ 20 to 48 feet ▾ $1895 to $35,000

Thousands of Reasons Why the FAIRFORM FLYER Is a Better Cruiser

THE Huckins Yacht Corporation of Jacksonville, Florida, builders of Fairform Flyer cruisers recognize the responsibility placed on each of the many thousands of screws used in the construction of each boat,—and putting quality before price, the Huckins Yacht Corporation uses Bridgeport Screws exclusively.

Bridgeport superior wood screws are available in any size or metal for marine construction—brass, bronze, Everdur, monel, etc.

We are prepared to supply any quantity and type of wood screws on short notice. Let us quote on your requirements.



The BRIDGEPORT SCREW COMPANY
BRIDGEPORT, CONNECTICUT

YARD AND SHOP

(*Continued from page* 214)

GAR WOOD TO BUILD 22-FOOTER

Gar Wood, internationally known sportsman and builder of the Miss Americas, has finally deferred to public demand and has added to the Gar Wood line the model 22, Baby Gar, a popular priced twenty-two foot runabout.

The first 22 to be completed left the production line at the Gar Wood plant at Marysville, Mich., recently, definitely marking the veteran boat-builder's entry into a new field.

In appearance and design the latest Gar Wood product follows closely the larger models that have made the name, Gar Wood, a synonym for speed the world over, and its material, workmanship and fastenings are identical with those specified for the twenty-eight and thirty-three foot boat.

The outstanding feature of the new Baby Gar is its soft-riding. This remarkable twenty-two footer can be driven at 30 miles per hour without exhibiting the least trace of bumping, and with a degree of riding comfort unusual in a boat of its size.

The exceptional steadiness and sea-worthiness of the 22 is the result of its sturdy construction and advanced design. It has the same wide-flaring bows which distinguish Gar Wood's racing models, and the same sharp Vee bottom tapering to a flat plane at the stern. This type of hull design prevents any tendency towards pitching or shoveling water at low speeds.

Mahogany planking and decking add to the beauty of this runabout. The frame is of white oak and keels and chine are fashioned of Apitong, a remarkable Philippine hardwood adopted for this use by Gar Wood last year after a long period of research in the forests of South America and Asia. Fastenings are of everdur, a non-corrosive alloy impervious to the effects of water. Bottoms are double planked with canvas laid in oil between planking, a feature which until recently was found only in the most expensive craft.

Powered with the Chrysler crown engine, developing 75 horse power, the 22-30 shows a speed of 35 miles with unusual riding comfort and with operating economy surprisingly low in a boat of its type and speed.

Both the 22-30 and its companion, the 22-35, which is equipped with a 135 horse power engine, are built in the open runabout type with one man tops supplied as optional equipment.

The introduction of the Baby Gar 22-30 adds the fourteenth standard model to the Gar Wood line which now includes craft from 22 to 35 feet in length—and capable of speeds up to 55 miles per hour.

TO OPEN JERSEY STREAMS

It was recently announced by J. Spencer Smith, president of the New Jersey State Board of Commerce and Navigation that the Legislature had been petitioned to provide means for opening and improving New Jersey State waterways. Not many people are aware of the fact that apart from its lakes, New Jersey possesses over 690 miles of sheltered waterways navigable by small boats. At the present time many of the streams are not in navigable condition only because of shoals and entrance bars which might readily be removed by dredging, thus opening a network of water highways. Aside from its commercial value, this would be a tremendous factor in promoting the use of pleasure boats for recreation purposes. The ownership of boats is increasing with tremendous strides. The number of motor boats in New Jersey increased 20% this year, which is approximately 2½ times the rate of increase in automobiles in the same state. The New Jersey registration of motor boats, according to statistics, is approximately one-fifteenth of the total Federal registrations in the United States.

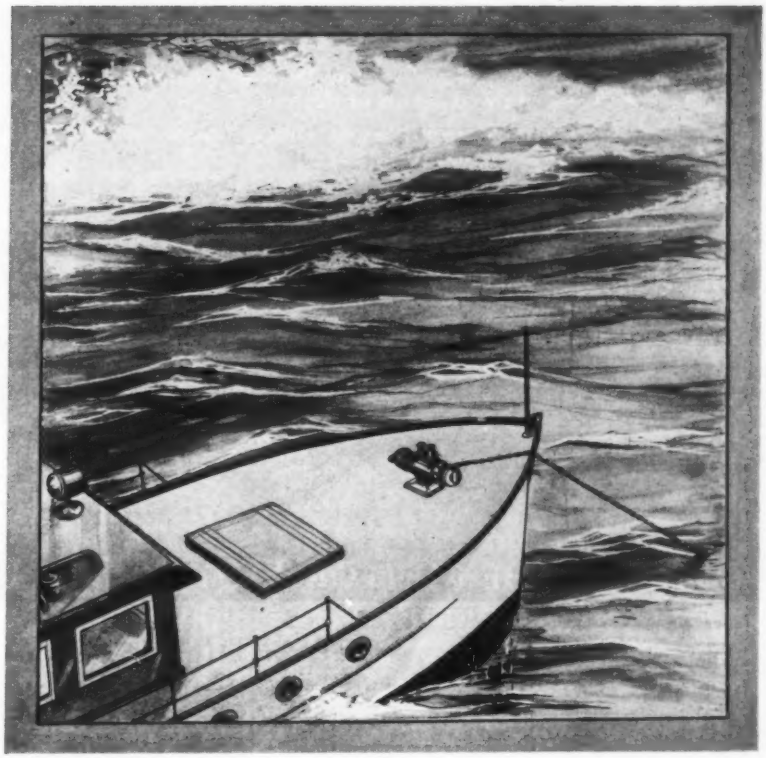
At the present time the State Board of Commerce and Navigation receives $95,000 from the gas tax, which sum is entirely inadequate for the purpose of the proposed dredging of shoals and bars. The Board feels that if it had a continuing fund of about $300,000 a year, it would be a matter of only five or ten years before most of the Jersey streams would be opened to light-draft boats. In due course of time channels could be broadened and deepened. The board recommends to the Legislature that 3% of the gas tax be set aside to be spent on channel deepening in the various waterways. This, in effect, means the returning to the waterways of the money collected from gas used on boats.

(*Continued on page* 218)

Advertising index will be found on 3rd last page

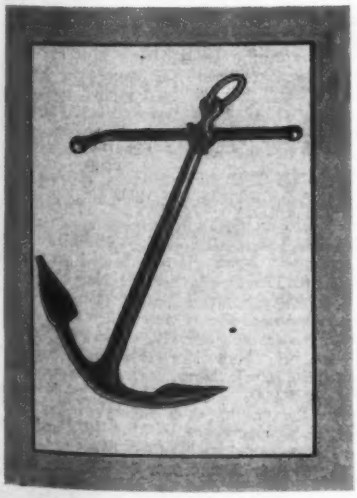
Any Port *may do in a storm . . but not* ANY ANCHOR!

When gale-lashed seas spell danger to even the stoutest craft . . . when your anchor is the last factor of safety . . . *then* your Laughlin Anchor will prove its worth —and justify its sixty-year reputation for greatest holding power.



Every Thomas Laughlin Anchor — folding, trawl, kedge and swivel — is the product of incomparable experience in the design of marine hardware. Every Laughlin Anchor is *hot-galvanized*—a process which greatly increases the protection against salt air and salt water corrosion.

Look for the Laughlin name and the Triang-L trade mark on the anchor you buy —and upon all other marine hardware and fittings. It is a guarantee of excellence—an assurance of reliability and dependability — a protection for you, your family and your guests . . . the mark of the original maker of motor boat and yacht hardware.



Your Purchasing Guide—Every yachtsman, work boat owner, boat builder and dealer should have a copy of the new Laughlin Catalog. You will need it as a complete purchasing guide to up-to-date marine equipment. Sent FREE on request. Write for your copy today.

The THOMAS LAUGHLIN Co.

MARINE HARDWARE — DROP FORGINGS — WIRE ROPE FITTINGS

144 Fore Street

PORTLAND, MAINE, U. S. A.

NEW YORK, CHICAGO, NEW ORLEANS, SAN FRANCISCO, LOS ANGELES, SEATTLE

Meteor

27 ft. All Mahogany Runabout
30 miles per hour - 8 cyl. - 115 H.P.
Carries ten persons comfortably
ALL SALT WATER CONSTRUCTION $1850
Price f. o. b. Piqua
Undeniably Greatest Value in the History of the Marine Industry

Direct sales eliminate 25 to 40% commission allowed agents or dealers
The Meteor compares most favorably with boats selling at $3,000

No other motor boat approaches the Meteor in its built-in value

Write Direct THE METEOR MOTOR CAR CO., Piqua, Ohio, U. S. A.

YARD AND SHOP

(*Continued from page 216*)

SUPPLEMENTING THE SPECIFICATIONS

In the tabulated specifications of standardized cruisers printed on pages 74 to 77 of this issue, it will be found that the Seawood Cruisers built by the corporation of the same name and the Kyle series are not included. The information concerning these boats was not at hand when these tabulations were prepared. The Seawood cruiser is a 32-footer of substantial construction and is arranged to accommodate six persons in its cabin space. It is smooth planked of ⅞ inch cedar which is fastened to oak frames with copper rivets. The power plant for this boat is optional and any of the modern engines of 75-odd horsepower can be selected. Tanks are arranged for 90 gallons of fuel and 60 gallons of water. The hull is constructed in a standard and a deluxe model, both of which are the same in dimension with a beam of 9-feet 9-inches and a draft of 2-feet 8-inches.

The Kyle Cruiser is also a heavily built 43-footer with a beam of 10½ feet. The standard power equipment provides for two engines with which speeds up to 25 miles per hour can be secured. A somewhat similar 34-foot cruiser is powered with a single engine, while 47 and 50 foot boats are also to be constructed. The accommodations of the 34-footer provide four berths, while the 43-footer provides six. The larger boats have still more berth space. The construction of all is generally similar in that they are planked with cedar over heavy oak frames and trimmed in teak with substantial bronze fastenings and equipment. Engines of proper capacity for each model are specified and sufficient tank capacity to harmonize with the size of the boat is provided.

SECURE MOORINGS

An improved type of mushroom mooring anchor is offered the yachting public by Topping Brothers, New York City, distributors for the Fairhaven Bulb-Shank Mooring Anchor. The Fairhaven Anchor embodies a number of noteworthy principles. Perhaps the most important of these is the weight which is cast right into the shank of the anchor near the shackle in the form of a bulb. This bulb represents about one-quarter of the total weight of the anchor and serves a two-fold purpose. First, it prevents the anchor from standing upright on the bottom when lowered and eliminates a source of danger on which boats may strike and pierce their bottoms. Secondly, the bulb, by rising somewhat from the bottom when the boat gives a strong pull on the chain in a short sea, prevents sudden strains on the holding part of the anchor. This feature explains in a large measure the reason for the exceptional holding power on a given weight which these moorings possess.

The walls of the saucer which is imbedded in the mud are reinforced on their hollow sides by strengthening walls which perform the double duty of providing increased strength where it is needed most and also preventing the anchor from turning in its bed in the mud as the boat swings with the tide. This prevents the balling up of the anchor with mud which accounts sometimes for its breaking and loss of holding power.

Another valuable feature of the Bulb Shank Mooring is the eye which is cast into the outside of the saucer to which a light line is attached for the purpose of tripping the anchor when it is to be pulled up. The saucer is scientifically designed to afford maximum holding power and the shank is long so that it can never be broken from the ground when used with the proper amount of chain.

NEW CHARTS AVAILABLE

The United States Coast and Geodetic Survey announces the publication of the following new editions of charts:

New edition of Chart No. 3694, Hudson and East Rivers, from West 67th Street to Blackwells Island, New York and New Jersey. February, 1930. Scale, 1:10,000. Dimensions, 31 by 46 inches. The new edition shows amendments to various surveys by the U. S. Engineers to June, 1929. Price, 75 cents.

New Edition of Chart 541. New York Harbor, Upper Bay and Narrows (Anchorage Chart), New York and New Jersey. February, 1930. Scale, 1:10,000. Dimensions, 34 by 44 inches. This new edition shows the results of a survey of Bay Ridge Channel made by the U. S. Engineers in May 1929 and other amendments including the recent changes in the anchorage limits.

(*Continued on page 220*)

THE Buffalo OIL ENGINE

ECONOMY

The announcement of the BUFFALO DREADNAUGHT OIL ENGINES will take front rank among the important statements reaching the public in 1930 from the marine industry.

The experience and resources of the BUFFALO GASOLENE MOTOR COMPANY who have pioneered in the marine field makes it possible to produce this dependable oil engine.

The new BUFFALO DREADNAUGHT OIL ENGINE brings you gasoline motor dependability with Diesel engine economy, but free from their troubles, burning low grade fuels, that can be purchased in any port — gasoline-kerosene distillate-alcohol and light fuel oils. This means a big saving in your fuel bill and the *elimination of fire hazard* aboard your boat. They do not require the services of an expert operator.

POWER

You will thrill to a performance such as you have never known before; a smooth, quiet, unfailing flow of power—quietly delivered.

5-7/8" BORE 7" STROKE

4 CYLINDER — 130 H. P.
6 CYLINDER — 190 H. P.
8 CYLINDER — 220 H. P.

In designing and constructing this new engine not a single item making for efficient, dependable and economical performance has been overlooked. The more exacting the requirements the greater you will appreciate that the BUFFALO DREADNAUGHT OIL ENGINE possesses everything that wins you to a fine power unit for your boat.

Full Information Upon Request

SINCE 1897

BUFFALO GASOLENE MOTOR CO.

BUFFALO, NEW YORK

PHILIPPINE MAHOGANY

is standard for

GOOD BOAT CONSTRUCTION

as supplied by

BLACK & YATES

used by the leading manufacturers of High Grade

OUTBOARD MOTOR BOATS, RUNABOUTS and CRUISERS

for the following reasons:

1 BEAUTY—Quarter-sawn Philippine Mahogany is beautifully figured, making it most desirable for transoms and joiner work on all types of fine craft.

2 STRONG AND DURABLE—It can be resawn to 1/4" or 5/16" planking and still retain remarkable strength and durability.

3 VERY LIGHT WEIGHT—The light weight of Philippine Mahogany saves power and increases speed. Its durability and strength conserve material by allowing the use of thinner planking without sacrificing strength or safety.

4 EASY TO WORK—Black & Yates Philippine Mahogany is of a soft even texture and has excellent bedding qualities.

5 MOST ECONOMICAL—For many reasons Philippine Mahogany is most economical. Its cost is considerably less than other mahoganies because it is imported DUTY FREE from the Philippine Islands, a United States possession. This saving is passed on to the consumer. Philippine Mahogany is equally suitable for joiner work as well as for planking. Off cuts from Philippine Mahogany planking (usually a total loss where other lumber is used), can be utilized with Philippine Mahogany for joiner work in other parts of the boat.

6 COMES IN GOOD WIDTHS AND LENGTHS which are so essential for planking, transoms and cabin sides. By using Philippine Mahogany for both planking and joiner work the boat builder can buy in larger quantities at lower prices by ordering in carload lots.

7 FREE FROM PIN WORM-HOLE DEFECTS which so often mar the finish of an otherwise perfect boat. For thin outboard planking it is absolutely essential to have all clear stock. We guarantee our Philippine Mahogany to be free from pin worm-holes.

Black & Yates Philippine Mahogany is imported direct from the Philippine Islands to our Brooklyn, N. Y., yard, where a stock of two million feet of clear, thoroughly air-dried and seasoned lumber is carried at all times for immediate shipment.

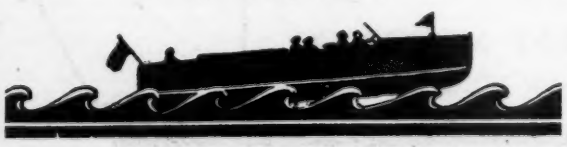
Let us quote on your requirements for 1930

BLACK & YATES, Inc.

Paramount Building

1501 Broadway **New York, N. Y.**

Telephone: Longacre 1345-6-7



YARD AND SHOP

(*Continued from page* 218)

SAVING TIME IN THE SHOP

Efficiency in the building, repair and maintenance of wood craft involves the use of time- and labor-saving equipment wherever possible. The number of exacting time-consuming jobs encountered in the construction of a fine yacht or cruiser is manifold, especially in the details of woodworking where the quality and thoroughness of the work either makes or breaks the job, both from the standpoint of its structural strength and the appearance it presents as a finished craft.

Many of the country's builders of fine boats have found in the Beaver Combination Woodworker one of their greatest aids to production efficiency. The Beaver, manufactured by the Hutchinson Manufacturing Company of Norristown, Pennsylvania, is a practical combination of a rip saw, a parallel straight-line cross-cut saw, an accurate mitre saw, a jointer, and a boring and dadoing machine. So valuable did the Beaver prove in the cabinet shop of the Vinyard Shipbuilding Company of Milford, Delaware, that Mr. Vinyard had another installed deck-high on a platform between cruisers where they lie in slips, thus eliminating the endless climbing up and down ladders in going to and from the cabinet shop.

Occupying, as it does, only one square yard of floor space, it is possible on larger craft to set the Beaver right on deck or in a cockpit, thereby placing the machine literally under the worker's hand. A valuable feature of the Beaver is the fact that it operates from ordinary electric light current. The arrangement is such that, regardless of the operation it is performing, the work all lies in the same line so that the handling of long material need not interfere with other construction work going on nearby.

A Parisian Motor Boat Show—the Salon Nautique. Chris-Crafts occupied a prominent place in the display

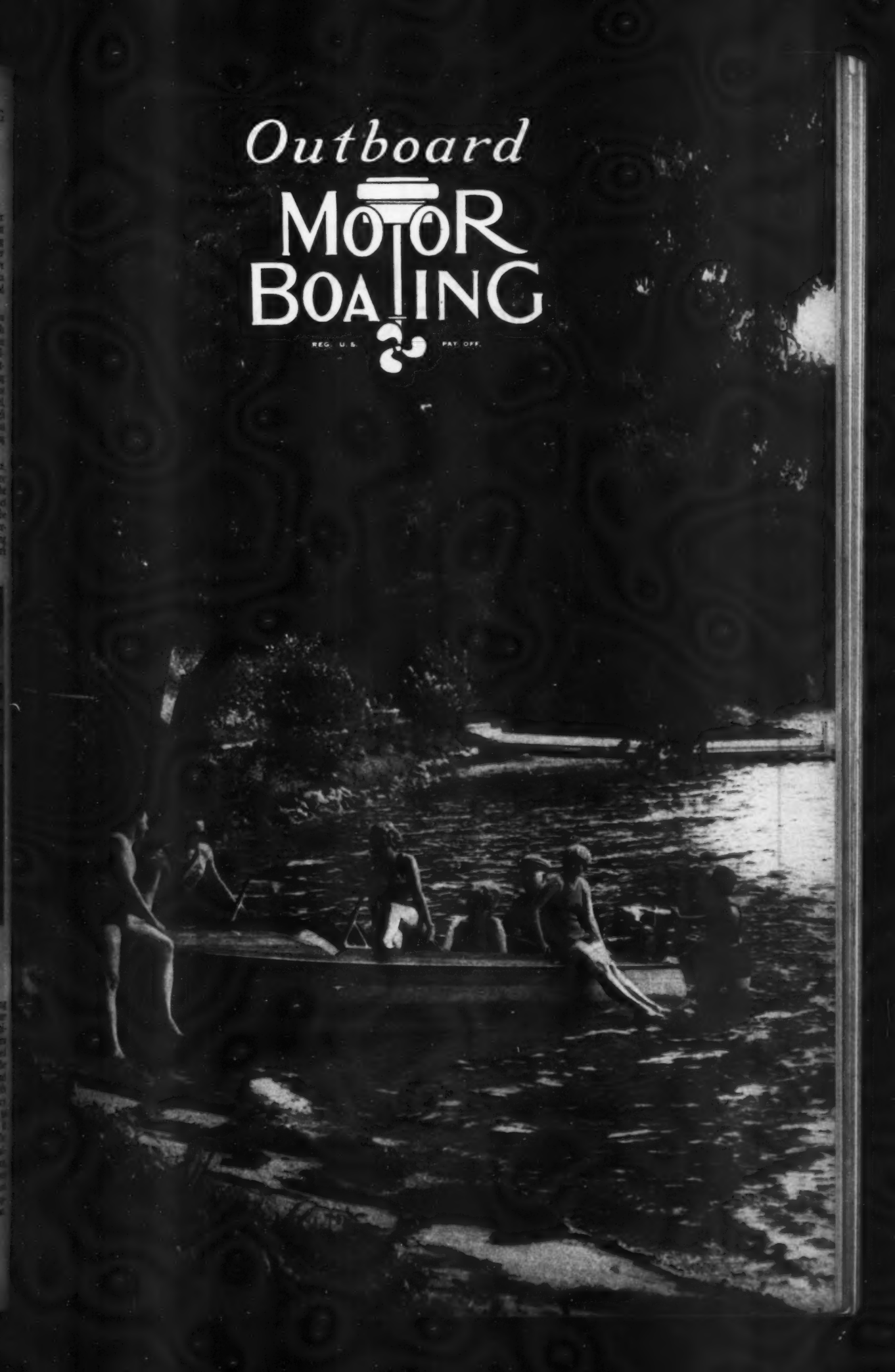
STERN DRIVE

D. W. Onan & Sons of Minneapolis, Minnesota, are offering the boating public a new type of stern drive and reverse gear embodied within a single unit, known as the Capitol. The Capitol Unit is designed for motors installed in the extreme stern of a boat underneath the hatch or afterdeck and is so arranged that with the motor driving straight through the transom the shaft is carried down vertically outboard through the unit and drives the wheel which is hung in a horizontal line parallel with the bottom of the boat, thus avoiding the obvious inefficiency of a rank pitch. The Onan Unit is especially well adapted for use with the new model Ford A industrial motor, although it may be adapted as well for other types of power plants. The advantages which the Capitol drive offers are numerous; the valuable portion of the boat amidships is saved for passenger space, steering is by propeller, turning the boat within a shorter space and holding the boat to a dock by throttling the engine, instant stopping within a boat length and driving control which approaches the facility offered in the handling of a motor car

Advertising index will be found on 3rd last page

Outboard MOTOR BOATING

REG. U. S. PAT. OFF.



MORE RECORDS...

with GULFPRIDE OIL 100 and GULF NO-NOX MOTOR FUEL

25 First Place
22 Second Place
22 Third Place

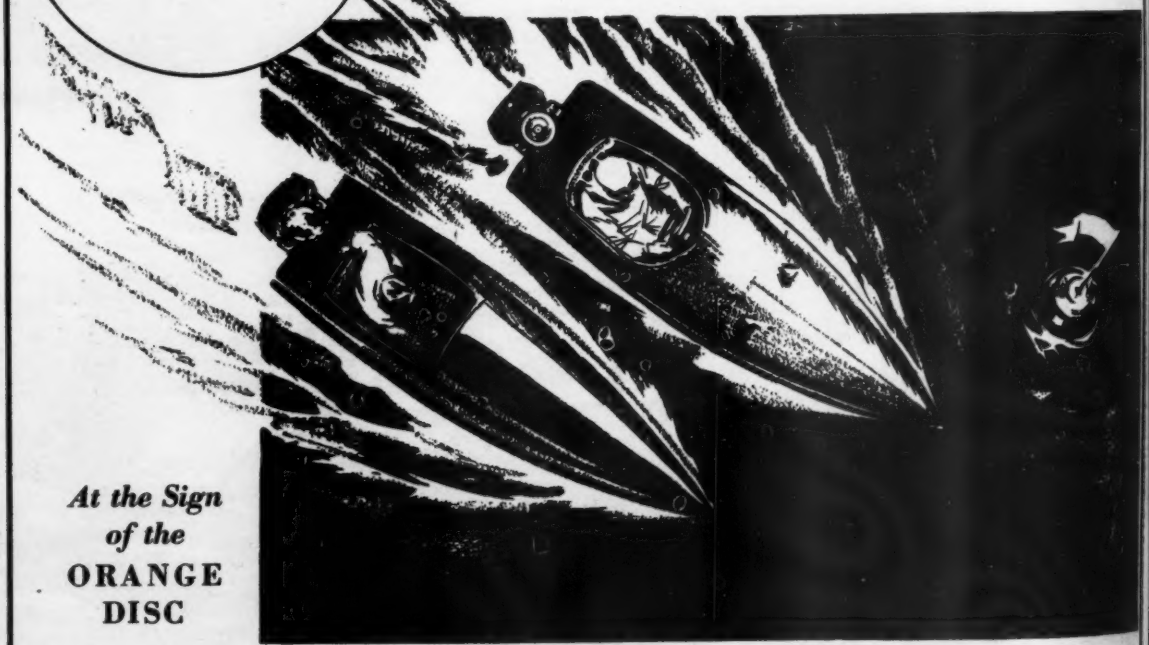
69 out of 93 boats to finish in the first, second and third places in races of the Florida Outboard Motor Association from November 10th, 1929 to January 6th, 1930.

Malcolm Pope, famous Outboard record holder wires from Florida: "We have never before had such perfect lubrication and engine performance as we have experienced this winter with GULFPRIDE and GULF NO-NOX MOTOR FUEL".

GULF

GULFPRIDE OIL 75 GULFPRIDE OIL 120
GULFPRIDE OIL 100 GULFPRIDE OIL 150
GULFPRIDE OIL 200

America's Finest Lubricants for Outboard Motors, Marine Motors, Aircraft and Automobile Motors.



***At the Sign of the* ORANGE DISC**

GULF REFINING COMPANY

Advertising index will be found on 3rd last page

Outboard MOTOR BOATING

Fifty-Seventh St. at Eighth Ave.,
New York, N. Y.

Edited by
CHARLES F. CHAPMAN

APRIL, 1930

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CEESTEPPER WINS IN EUROPE

A very interesting letter received in this country from Mr. Kurt Oldenburg tells of an American boat winning the outboard championship of Northern Europe in 1929. The boat in question is a Penn Yan Ceestepper, shipped from this country in 1928. Mr. Oldenburg's story, briefly, taken from excerpts from his letter, is as follows:

"In 1929 I acted as salesmanager for the Evinrude Department of A-B Maritim in Helsingfors, Finland, and secured for my use a Penn Yan Ceestepper, which was imported into Finland by A-B Maritim in 1928. This boat created very great interest, due to the fact that it was the only American racing boat actively participating in the different races. I drove the boat in Class C with an Evinrude 20 h.p. racing motor with such good results that I consistently won during the whole racing season.

"As the leader in my class I was selected to represent Finland in the race for the championship in Stockholm-Waxholm on July 20 and 21. In this race I defeated twenty-five well known competitors. As a result I was invited to the Swedish 'Kungl. Motor-batsklubben's' International Racing Boat Regatta in Stockholm on August 4. In this regatta there were forty outboard racing boats participating with Swedish, as well as foreign drivers, and I again won in both Class C and Free-for-all.

"Because of these victories the Penn Yan boat has become very famous and was much admired everywhere that I drove it. Most all of the racing boat drivers here have now very great faith in the Penn Yan Ceestepper."

Mr. Oldenburg has just moved to Stockholm and has become connected with the Amerikanska Gummi A-B, Swedish representatives of the Goodrich Rubber Company and the Johnson Outboard Motor Company. This year he will again drive a Penn Yan racing boat, but intends to use, in the major races in Europe this year, a Johnson Sea Horse, Class C, 24 h.p. racing motor. His new boat is already ordered from the Penn Yan Boat Company and Mr. Oldenburg is entered in all the more prominent races, not only in Sweden, but in other parts of Europe as well. He is to drive the Penn Yan and Johnson combination in the German Championship Regatta at Berlin on June 1, and at the International Racing Boat Regatta Lido-Venice, on September 17 to 21, and in Helsingfors in the International race between Finland and Sweden.

KENNEBEC SKIPPER

A SPEEDY RACER

$195 F. O. B. Waterville Maine

Send for fully illustrated catalog of boats, canoes, paddles, equipment, etc.

A 12-foot single cockpit step plane, with 5-foot deck. Carries two people with ease. Takes Class B or C motor. Zips through all kinds of water with tremendous power, takes sharp turns. Built to last. Typical Kennebec staunch construction. All copper and brass fastenings. Full description in our new catalog.

OTHER KENNEBEC BOATS

Joy Boy III, popular canvas-covered type, invisible sponsons, price $145, f.o.b. Waterville.

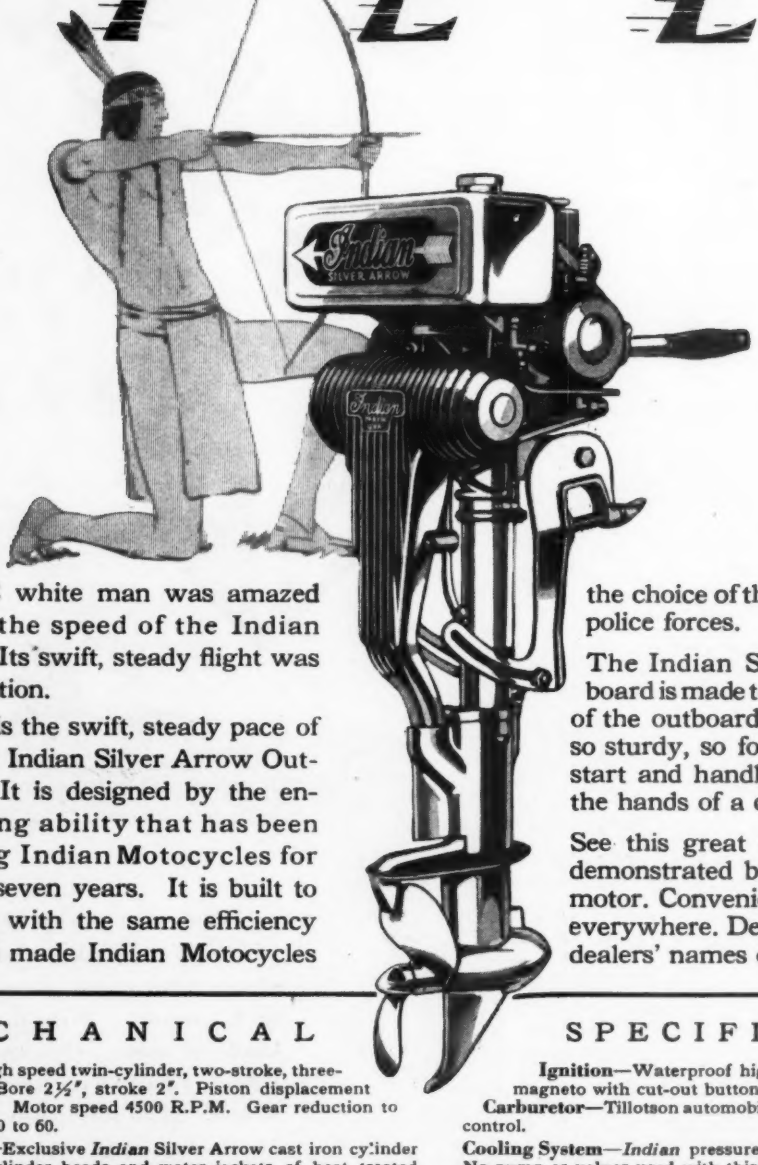
Prize Baby, medium priced staunch boat for general use, price $158 f.o.b. Waterville.

Pleasure Craft, new low-priced boat of runabout type, price $155, f.o.b. Waterville.

Comet, a baby runabout of 4-passenger capacity, price $289, f.o.b. Waterville.

THE KENNEBEC CANOE CO.
DEPT. 31 WATERVILLE, MAINE

SPEED



THE white man was amazed by the speed of the Indian arrow. Its swift, steady flight was a revelation.

So, too, is the swift, steady pace of the new Indian Silver Arrow Outboard. It is designed by the engineering ability that has been building Indian Motocycles for twenty-seven years. It is built to perform with the same efficiency that has made Indian Motocycles the choice of the country's largest police forces.

The Indian Silver Arrow Outboard is made to meet the demands of the outboard enthusiast, yet, is so sturdy, so foolproof, so easy to start and handle that it is safe in the hands of a child.

See this great motor . . . have it demonstrated before you buy any motor. Convenient service stations everywhere. Descriptive folder and dealers' names on request.

MECHANICAL SPECIFICATIONS

Motor—High speed twin-cylinder, two-stroke, three-port type. Bore 2½", stroke 2". Piston displacement 19.63 cu. in. Motor speed 4500 R.P.M. Gear reduction to propeller 100 to 60.

Cylinders—Exclusive *Indian* Silver Arrow cast iron cylinder sleeves. Cylinder heads and water jackets of heat treated aluminum alloy. Hot Head Motor design.

Connecting Rods—Carefully balanced phosphor bronze; extra large bearings on crankshaft and piston wrist pin.

Pistons—Special *Indian* aluminum alloy fitted with two piston rings, designed for maximum performance with *Indian* Hot Head cylinder.

Crankshaft—Nickel steel forging, balanced. Hardened and ground to mirror finish. Main bearings 15/16" dia.; 2½" long. Crankshaft bearings, 15/16" dia.; 1-3/16" long.

Ignition—Waterproof high tension Bosch flywheel magneto with cut-out button.

Carburetor—Tillotson automobile type; *Indian* handle grip control.

Cooling System—*Indian* pressure type with visible outlets. No pump or values used with this system.

Underwater Exhaust—One-piece silencer, constructed of silicon aluminum alloy. Fitted with heat dissipating fins and cut-out.

Propeller Shaft—Stainless steel, heat treated, ground; runs on bronze and ball bearings.

Gears—Heat treated alloy steel. Pinions, twelve teeth; gears, twenty teeth.

Indian
SILVER ARROW

Price, $185.00

F. O. B. Springfield, Mass.

OUTBOARD MOTOR

INDIAN MOTOCYCLE CO. DEPT. M **SPRINGFIELD, MASS.**

Advertising index will be found on 3rd last page

APRIL Outboard MOTOR BOATING 1930

LOOKING INSIDE THE OUTBOARD ENGINE

A Discussion of the Several Practical Types of Engines Used for Outboard Service: The Single, the Parallel Twin, the Opposed Twin, the Four Cylinder Opposed, and the Radial Type

By P. A. TANNER, M.E.

Part II

ALL the original outboard motors had one cylinder only. Then the opposed twins appeared. There is one four cycle motor with five cylinders. The four-cylinder two-cycle type is well known. Each type has its advantages and its disadvantages; each fits into a particular service.

The old single-cylinder engines were about ten to twelve cubic inches piston displacement and developed up to two horse power at speeds from 800 to 1000 revolutions per minute. They were too heavy and cumbersome, had too little power, to survive.

But there are still single-cylinder outboard motors on the market. For example, one has a bore of two inches, and stroke of one-and-one-half inches, piston displacement of 4.71 cubic inches, develops 1½ horsepower at speeds up to about 3,000 revolutions per minute, and weighs only 27 pounds complete and ready to run.

But the single-cylinder motor does not continue in high popularity for several very definite reasons. Perhaps the most basic fault is that it is not adapted to high speed operation. There is no way to counterbalance and thus off-set the inertia forces of a rapidly reciprocating mass—the piston and connecting rod—except by providing another equal mass moving at the same speeds in the same plane and in the opposite direction at the same time. Revolving weights may be counterbalanced by other revolving weights, and as a compromise, about half the reciprocating forces of a single piston and rod may be so counteracted by accepting the force of an unbalanced rotating weight in another plane. These unbalanced forces in a single cylinder engine cause vibration. While the piston and rod are moving in one direction, the engine itself tends to move in the other. As the speed increases, the forces mount as the square of the speed. And while such an engine may appear to operate more smoothly at a higher speed, the intense force is still there causing vibration of perhaps less amplitude, but certainly of greater intensity.

The flywheel, under such conditions, being of considerable weight and a considerable distance to one side of the cylinder, tries to remain stationary like a spinning top. The piston and rod are moving rapidly inside the engine. The engine itself tends to shake. The result is an antagonism of forces each working against the others. Extremely high bearing pressures sometimes result. Always there is an annoying vibration to the boat.

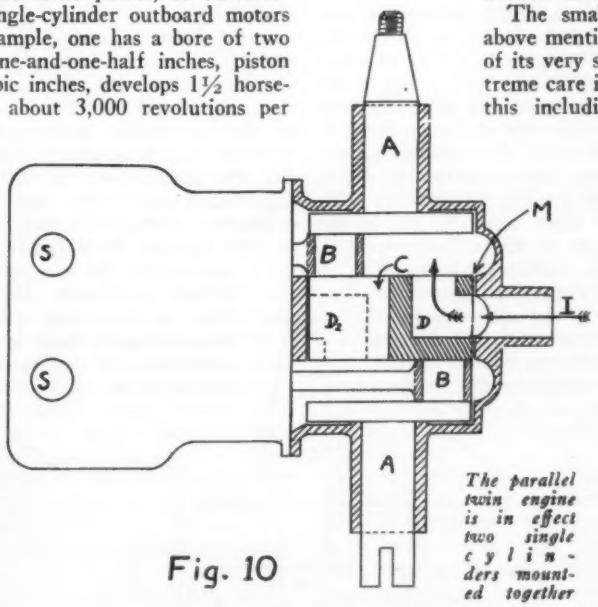


Fig. 10

The parallel twin engine is in effect two single cylinders mounted together

The small single cylinder motor above mentioned is successful because of its very small size and because extreme care is used in its construction, this including a special lubrication system which permits the ample bearings to carry the load.

The manufacturing cost of a single cylinder outboard motor is not so much less than that of a twin. The counterbalanced crank shaft costs as much or more than the two-throw shaft of the twin. There are but two main bearings in either motor, and but one crank case. The size and weight of the flywheel — also the magneto — may be slightly less in the single than in the twin but there is but slight difference in the cost. The lower unit with its drive shaft casing, gears, and propeller are the same at least for equal power. About all that is saved is the cost of one cylinder and one piston and one connecting rod. The performance of the twin over the single is sufficient to warrant the extra cost, except, perhaps, in a very small size.

There are two general types of twin cylinder outboard motors. Figure 7 in the previous chapter, illustrates the Opposed Twin, in this case with the cylinders in line and the connecting rods off-set. Figure 10 illustrates the Parallel or side-by-side twin motor.

Most motors are of the Opposed Twin type not only in number of models manufactured, but also as to quantities produced. This type has very decided advantages.

While even the Opposed Twin is not in perfect running balance, it most closely approaches the vibrationless type particularly when the crank shaft is counterbalanced and the cylinders are placed in line. The inertia forces of the piston and rod in one cylinder are counteracted by those in the other. This engine is therefore most perfectly adapted to high speed operation. Aud much of the phenomenal performance of modern motors is due to high speeds developing exceptional power.

The Opposed Twin is neither difficult nor costly to build since only one crank case with two main bearings, one flywheel, one ignition device, and one carbureter are required. The various phases of each cycle occur in both cylinders at the same time; one spark, in effect, is made to pass through both spark plugs; the explosions occur simultaneously.

When the cylinders are off-set and the connecting rods are straight, as is now the more general practice, there is a small unbalanced force known as a couple which tends to create a side-to-side vibration due to the fact that the reciprocating masses operate in slightly different planes. This vibration is almost unnoticeable, however, and is a lesser evil than the offset connecting rods as will be explained.

The Opposed Twin, too, is easily adaptable to the three-port design or to the two-port with either automatic valve or rotary valve. The accessories may be conveniently grouped, the gasoline tank and the muffler on the back, the carbureter and its controls in front readily accessible to the operator, the spark plugs in a protected position, and the flywheel partially enclosed by the tank. In one case, this type has been still further simplified by the use of but one third-port in one of the cylinders and the assembly of the gasoline tank forward over the carbureter where it protects the operator from coming into contact with the rotating flywheel and tends to muffle and divert the sound of the air intake to the carbureter.

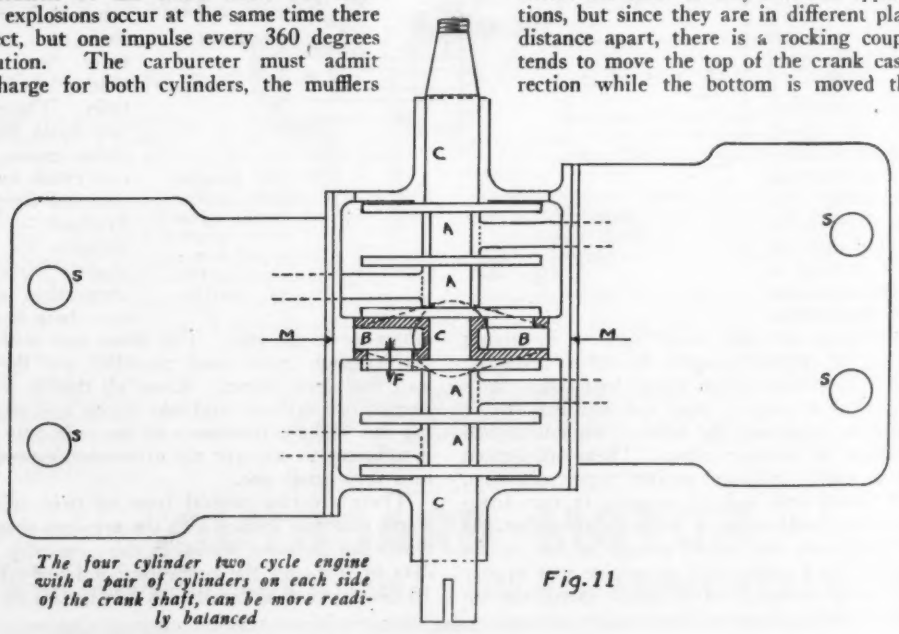
In the Opposed Twin each cylinder fires each revolution of the crank shaft but since these two explosions occur at the same time there is, in effect, but one impulse every 360 degrees of revolution. The carbureter must admit enough charge for both cylinders, the mufflers must quiet the exhaust from both, and the flywheel must be heavy enough to carry both pistons past compression at the same time.

There is another form of vibration which occurs in all types of motors, known as Torque Vibration. When the burning gases are pressing vigorously down upon the piston in the cylinder the connecting rod, extending from the center of the piston to the crank pin of the crank shaft is at an angle to the center line of the cylinder. There is therefore a sidewise component force on the piston pressing it against the cylinder wall. Instead of the cylinder moving under this force, the crank shaft is caused to revolve. But if the crank shaft were held stationary at its lower end the cylinders and crank case would revolve; in fact, the Gnome, French air plane engine ot some years ago, had revolving cylinders and a stationary crank shaft. Torque Vibration is caused by this reaction of the cylinders to the acceleration of the crank shaft and flywheel during the power stroke. If there is a steering handle attached to the motor, and the motor is of the type which turns as a whole to steer, this handle will shake in a horizontal direction. The movement is most noticeable when running at slow speed but has a smaller amplitude and higher intensity at higher speeds.

In the Opposed Twin motor the Torque Vibration is the same as in a single-cylinder motor of the same power, speed, piston displacement and weight because the reaction in both cylinders occurs at the same time and is in the same direction.

The twin motor with cylinders side-by-side shown in Figure 10—the Parallel Twin—is, in effect, two single-cylinder motors placed closely together but using a common carbureter, flywheel and magneto, cooling system, and muffler. While the two cylinders are joined together in one block, and the two crank cases are in one casting, each belongs exclusively to its own single-cylinder unit. The crank pins are 180 degrees apart so that when one piston is on upper dead center, the other is on lower dead center; when one cylinder is firing, the other is exhausting.

The Parallel Twin is not in perfect balance. To some extent the reciprocating mass of one piston offsets the other as they move in opposite directions, but since they are in different planes some distance apart, there is a rocking couple which tends to move the top of the crank case one direction while the bottom is moved the other.



The four cylinder two cycle engine with a pair of cylinders on each side of the crank shaft, can be more readily balanced

Fig. 11

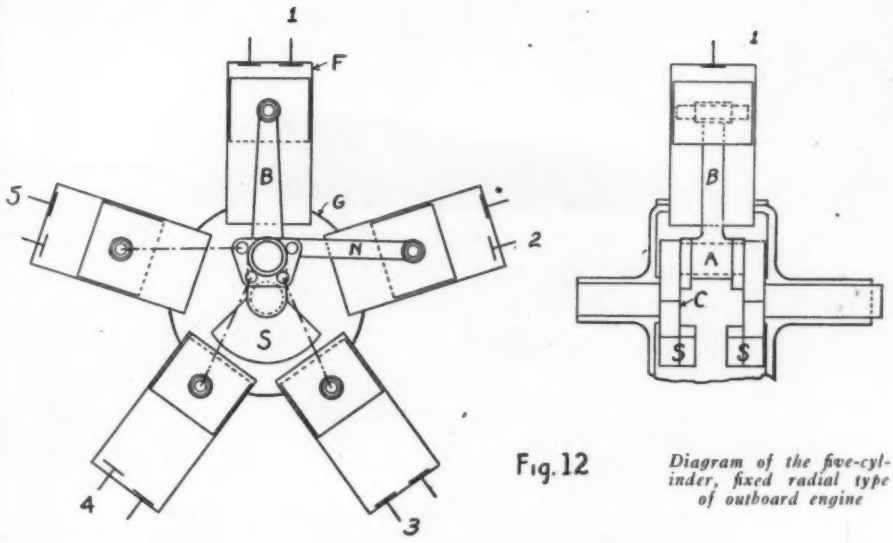


Fig. 12 *Diagram of the five-cylinder, fixed radial type of outboard engine*

At high speeds, with light weight reciprocating parts, and with a fairly heavy counterbalanced crank shaft, crank case, and cylinder assembly, the resulting vibration has little annoying effect but it is there and must evidence itself at least to some extent in higher bearing pressures.

There is some theoretical saving of weight in the Parallel Twin type of construction. Since the carbureter serves but one cylinder at a time it need be only half as large as for the Opposed Twin. The same applies to the muffler. Probably the cylinder block is lighter than two single cylinders. And the flywheel, required to carry the motor past the compression in one cylinder only, can be smaller. The crank case, however, is longer and heavier. The crank shaft, particularly with the heavy center cheek as shown in Figure 10, is considerably heavier than in the opposed type.

Torque Vibration in the Parallel Twin is very slight. Since the cylinders fire alternately, the crank shaft acceleration, and the reaction of the motor to it, is only half as great as in the opposed twin motor. Perhaps the Torque Vibration is the most annoying of any in these small high speed motors because it is most apparent in the steering handle where the hand of the operator is constantly aware of it. The claim for smoothness for this type is therefore justified by the fact that that vibration of which the operator is the most conscious is minimized.

It is true that the carbureter, muffler, and some other parts may be made smaller and perhaps simpler in the Parallel Twin, but the flywheel magneto is more complicated. In the opposed type the same spark from the magneto is, in effect, made to pass through both spark plugs at the same time. But in the parallel type two sparks must be generated 180 degrees apart. In some types of magneto this could be readily accomplished by simply making a double cam to actuate the breaker mechanism instead of a single nosed cam. But in the other type of magneto which is in wide spread use, it is necessary to use two separate coils and two breaker mechanisms. This increases both weight and cost.

One advantage of the Parallel Twin is the ease of starting. In the Opposed Twin the operator must crank the motor against the compression of both cylinders at the same time. In the Parallel Twin but one cylinder is on compression, and it is easier to turn. And if the first explosion is weak, as it may be in starting, there is another to carry on when the crank shaft has made a half revolution.

The Parallel Twin construction is not by any means new except in the American outboard motor field. An outboard motor of this type has been in production in Sweden for a number of years. Two-cycle inboard marine motors were built in this way twenty-five or thirty years ago and some are still on the market, both two-cycle and four-cycle. At least one early automobile was powered with a twin cylinder four-cycle motor. It is very likely, however, that this construction will find favor among engineers and with the public only in the smaller sizes where the inherent vibration is so small as to be hardly noticeable—in large sizes it might become troublesome.

Every one is familiar with the four-cylinder automobile engine with the cylinders vertical and in line working on a single long crank shaft. The length of this type, if nothing else, makes it unadaptable to outboard motor service. There is also an inherent—secondary—vibration in this type which is one reason the six is rapidly superceding it even in the smaller cheaper cars.

In the four-cylinder outboard motor as illustrated in Figure 11 two cylinders are on one side of the crank shaft opposing the two on the other side. This type is in perfect theoretical balance since both the primary and the secondary forces are opposed in opposite reciprocating masses. In effect, the four-cylinder opposed two-cycle motor consists of two opposed twins placed one above the other. When the two pistons in the upper cylinders are on upper dead center, those in the lower cylinders are on lower dead center. The upper pair fire simultaneously every 360 degrees of crank shaft travel, and so do the lower pair, but the firing is alternate so that a pair of explosions occurs every 180 degrees.

Motors of this type have been built with a separate carbureter serving each crank case—each pair of cylinders—but the more general practice is to use one carbureter, one muffler, each of which need be large enough only for the one pair of cylinders. The flywheel need be large *(Continued on page 252)*

The new 22-foot runabout Inez Mae II with its Elto Quad makes a serviceable outfit

OUTBOARD CRUISING ON LAKE HURON

Attractive Places on the Great Lakes Visited by an Ambitious Crew With a Small Boat Powered With an Elto Four-Cylinder Engine

By L. J. BAILEY

There's nothing very beautiful and nothing very gay,
About the rush of motor cars upon a broad highway;
But have you known the fragrance of a forest at the dawn,
Or viewed the moonlit waters when the summer day has gone?
For there's beauty in each ripple as they gleam so clear and bright,
And the soft wind whispers comfort in the pine trees thru the night.
And you lie awake and marvel at the glory of it all,
And you lose your cares and worries as you heed the water's call.

WITH the coming of vacation time plans were complete for the fifth annual cruise of Inez Mae. With the completion of a new boat, which is truly a super runabout, being 22 feet in length by 6 feet four inches beam, sea skiff type, with a water tight bulkhead amidships and provision for sleeping four forward, and the matching of this craft with a new Elto Super Service Quad, we had only to load our equipment and start. A fifty gallon gasoline tank connected directly with the motor, and equipped with valve for air pressure took care of the question of fuel supply. With full camping equipment, and provisions aboard, and our crew of four, the craft showed a speed of 12 miles per hour.

Just a word regarding the crew, who need little introduction to readers of MoToR BoatinG, and even less to hundreds of yachtsmen and boat lovers of the Great Lakes. Mrs. Bailey, who holds the title of Commodore; Mary Talbot, affectionately dubbed Middle Island, as about the second day out her nose burns to the same steady red as that famous light on Lake Huron; her brother, Norman, known as the Navigator; and myself in the position of Engineer, comprise the crew. We have covered the Great Lakes in outboard driven craft, rather thoroughly in the past several years.

We left Bay City at evening on August eighth, planning an all night run. The fact that it was the close of the day rather than early in the morning, only meant to us another glorious night under the stars. We had dinner aboard and were making fine progress when at 10:30 the tiller cable broke. Repairs were almost impossible in the dark, so we ran to within a mile of the beach, and throwing the anchor spent the night aboard. The following morning we stopped in at Oscoda, secured spare cable, and taking on 27

Inez Mae and a Sea sled have a little contest of speed

How the canvas shelter was arranged for sleeping aboard the runabout

gallons of gas soon headed out into a fair sort of sea. It was delightful until just as we passed Sturgeon Point we were hit by a severe thunder squall, and as the sky became overcast we ran into Black River and spent the night in a fishery. Black River forms a perfect shelter for small boats, and although the fishery was a bit too fragrant from newly tarred twine, at least it was dry. We were up at five, our natural inclination being somewhat overcome by the hordes of mosquitoes. A survey of the sky promised better weather. We had breakfast aboard at six o'clock, at which time we were crossing Thunder Bay. We were about 15 miles off shore and the fog was heavy and hundreds of pound nets strewn across the bay made it slow work, but at 8:00 we passed Thunder Bay Island and an hour later headed into Rockport, it seeming advisable to take on a full supply of gasoline at this point, as stations are rather scarce farther north.

At noon we were abreast Presque Isle Light, and Norman headed due north for False Detour Passage, 49 miles away on the north shore of Lake Huron. The Lake was like a pool of oil, although visibility was very low, due to a haze which seemed to shut us in like a wall, but we had lunch en-route, setting up our Coleman on one of the forward seats and serving fried herring with potatoes in the jackets and corn on the cob. At 4:30 we first sighted land ahead and as we drew nearer found we were exactly in line with the passage, and all were delighted to find how straight a course the Navigator had been able to maintain. We passed through False Detour Passage into Georgian Bay and landed at Tolsmanville at 6:30, having made a non-stop run of six hours and covered over 70 miles.

On Sunday it blew a gale from the northwest and we did not attempt to leave the harbor, but visited with friends on the island. The Commodore spent the afternoon baking lemon pies in the folding oven, which she maintains works as well as the range at home. Monday we ran across Georgian Bay to Thessalon, on the Canadian mainland, a distance of 25 miles, and from there up the old channel to Hilton Beach on St. Joe Island. Here we found a Quad like ours equipped with a racing wheel and attached to a heavy boat. We substituted our spare service propeller and noted the smile of happiness which always denotes a satisfied customer.

After a bass fishing expedition on Tuesday we drove up to the Soo and back, exchanging greetings with the officers on the never ending procession of steel freighters which carry their mountains of merchandise and grain and make the tonnage of the St. Mary's river the greatest of any point in the world.

Leaving St. Joe the following morning we were headed down the North Channel of Georgian Bay to keep an appointment with Ole Evinrude and his cruising party, when we were stopped by one of the 75-foot U. S. Coast Guard Boats. We had aboard, and in plain sight several cases of the product of the Soo Falls Brewing Company, of which our good friend, Jack Ryan, is Manager, but the officer was most courteous and after making a few inquiries regarding our destination, and the length of our proposed trip, proceeded on his patrol. We reached Cockburn Island at 4:30 and had a fine lake trout for dinner, cooked by steam on the fish tug, and I was fortunate in securing the head for my portion, that being the choice serving. The following day we were again wind-bound, but the wind went down with the sun and at sun-rise we

A picturesque view of Narrows Bay and Little Bay Finne

The combined crews of Bess Emily III and Inez Mae enjoy a camp dinner of mulligan and accessories

were aboard and while we shipped a little water as we crossed Mississaugii Straits, it was not at all serious. Just as we came abreast Jannet Head Light we sheered a drive pin, but it was only a matter of five minutes' work to replace it, and we ran into Gora Bay at noon. This is a quaint little village, high above the Lake, as the clay banks rise sheer out of the water for 400 feet. The wash of storms has kept the vegetation off the lower fifty or sixty feet and these white banks are visible for miles on a clear day. The harbor is excellent and facilities for supplies and fuel are number one. Hurrying along we spent the night in Mudge Bay and the following morning reached Little Current, where we were warmly greeted by the Evinrude party. We soon felt quite at home on their beautiful new cruiser, Bess Emily III, in spite of our rough clothes and the fact that our little craft would hardly make a respectable tender for the yacht. We had dinner with the Evinrudes and spent an hour or so with Mr. Telander aboard his trim little schooner, Norwester. When we left at 10:00 p. m. it was raining, but we had noticed some empty boat houses down the harbor and, running into one of them, slept most comfortably aboard.

Sunday came bright and fair, and Norman and Mary went tripping off over the hill to the little church whose spire was shining in the morning sun, while the Commodore and I set things in shape aboard. Just as they returned Mr. Evinrude came along, hunting for us, with an invitation to join them in a trip up into McGregor Bay. We soon set out in the wake of Bess Emily III and finally set up camp on a flat rock about 10 miles up in the Bay and within half a mile of where Bess Emily lay at anchor. In response to an invitation Mary and I went alongside an hour later and the Steward handed us two large baskets which contained roast chicken with all the trimmings and apple pie. I had quite a job keeping her from sampling all the good things before we got back to camp. The Evinrude party came ashore in the evening and all enjoyed a marshmallow roast around the camp fire. The moon came up like a great golden disk and flooded the water and rocks with light and we climbed the hill to view the beauty of the scene.

As we left, our visitors accepted an invitation to have dinner with us the following evening, with the provision that I was to serve mulligan, a fearsome sort of Irish Stew described in a previous article. We watched them slip away into the night, a Lightweight twin handling two tenders, and then went into council, for I said, "Gee—eleven for dinner and one-half loaf of bread in camp and the nearest store miles away," but the Commodore came to the rescue, saying, "You take care of the mulligan and the rest of us will manage the balance of the dinner."

Mary and I went trolling the following morning, with but indifferent luck, as the Quad was a bit too fast for successful trolling, but all through the morning we kept looking up in response to the yells and squeals of delight as Ralph Evinrude landed great northern pike up to 12 and 15 pounds. As the day progressed so did my feeling of uncertainty as far as my part of the dinner was concerned, but finally setting up the extra Coleman I went to work, and as Norman announced the arrival of our guests I had the Mulligan ready, and what a mixture it was. Salt pork, corned beef, clams, onions, potatoes, *(Continued on page 254)*

Get that "Ham-and-Egg" Appetite!

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MORE POWER

Where the Power in the Two Cycle Outboard Engine Comes from and How Losses May Be Guarded Against

By DICK COLE

POWER! More power! Still more power! This is the cry of the outboard motor fans. In conformity with the fundamental law of supply and demand, the outboard manufacturers are meeting the demand. The advancement in outboard motor construction and design has been so startling during the past three or four years that one ceases to be amazed at any new announcements. Rather, it is in a spirit of curiosity that one reviews the specifications of newly announced models. Four years ago one was startled by the announcement of an eight horse-power giant twin; today one accepts the 50 h. p. radial type outboard motor in a matter of fact manner, perhaps making the mental comment that the 100 h. p. motor is on its way. It is; it is just around the corner.

The thing that amazes the casual onlooker is: where does the power come from? The motor of today is not much bulkier, and no heavier, than its weaker brother of yesterday. Yet the power is doubled. How come? In some cases, additional cylinders are the simple answer. It is obvious to anyone that one plus one equals two; that two plus two equals four; so if a single cylinder delivers 2½ h. p., two cylinders will deliver 5 h. p.; four cylinders deliver 10 h. p.; and so on indefinitely. Likewise, if the cylinders are made bigger, one can readily understand the increase in power. But when the power of a motor is increased 50 per cent without adding more cylinders or without increasing the dimensions of the bore and stroke, then one sits up and takes notice. Some might be prompted to say: "Its a lot of boloney." But it isn't.

In a previous article this writer reviewed the reasons why the two cycle motor held sway in the outboard motor field. It still does—and always shall—in the moderate power class. For years the public, and the manufacturers themselves, did not take the two cycle motor seriously; it was a simple, cheaply constructed power-plant that was good enough to use where moderate power was required and strict economy was not considered. The two cycle motor settled into a rut and its potential possibilities were not considered seriously. Then came the popular clamor for outboard motors; competitive speed trials followed in natural order, and with them came the demand for more power. Racing clubs were organized; rules were formulated; standards were set; and motors were classified according to their piston displacement. This put the problem of how to crowd more power into a given space straight up to the manufacturers. The two cycle motor ceased to be merely a two cycle motor. It became a mathematical problem.

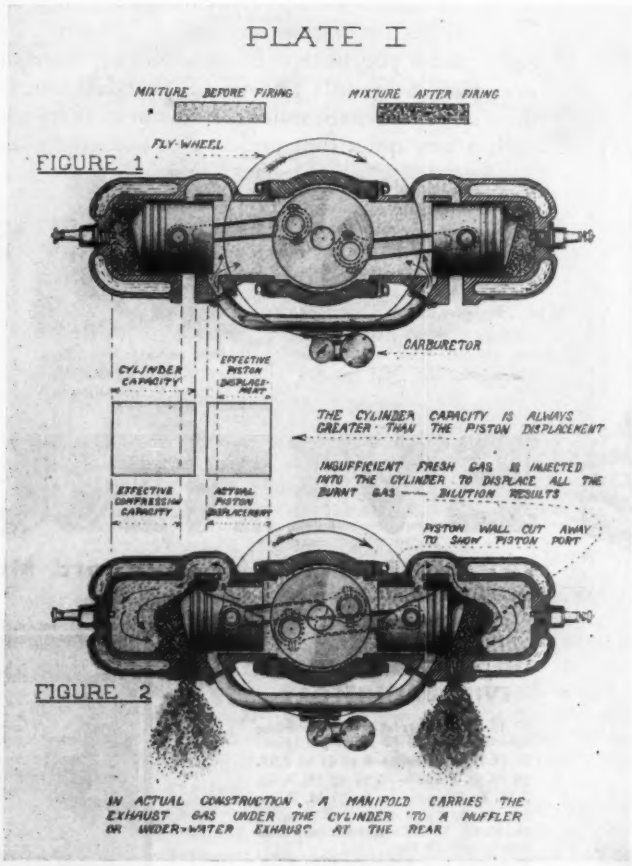


PLATE I
MIXTURE BEFORE FIRING
MIXTURE AFTER FIRING
FLY-WHEEL
FIGURE 1
CARBURETOR
CYLINDER CAPACITY
EFFECTIVE PISTON DISPLACEMENT
THE CYLINDER CAPACITY IS ALWAYS GREATER THAN THE PISTON DISPLACEMENT
INSUFFICIENT FRESH GAS IS INJECTED INTO THE CYLINDER TO DISPLACE ALL THE BURNT GAS —— DILUTION RESULTS
EFFECTIVE COMPRESSION CAPACITY
ACTUAL PISTON DISPLACEMENT
PISTON WALL CUT AWAY TO SHOW PISTON PORT
FIGURE 2
IN ACTUAL CONSTRUCTION, A MANIFOLD CARRIES THE EXHAUST GAS UNDER THE CYLINDER TO A MUFFLER OR WATER-WATER EXHAUST AT THE REAR

Diagrammatic drawing to illustrate the cycles of the outboard engine

The inherent weaknesses of the two cycle motor were studied and remedies propounded. Let us consult Plate I and delve into the inside of a motor. The figures depict horizontal cross-sections of a typical twin cylinder outboard motor of four port design. To a person with only a meager knowledge of motor construction, the drawings should make the succession of strokes obvious. In figure 1 the pistons have just passed over top center, the spark occurs, and the pistons are forced inward on the power stroke. The inlet ports from the carbureter are not yet covered by the piston. One might think, because the pistons are traveling into the crankcase, that some of the mixture would be forced out through the port. But the fact of the matter is that at high engine speed the opening of the inlet ports is so momentary, that the vacuum created in the crankcase is never entirely displaced with a fresh

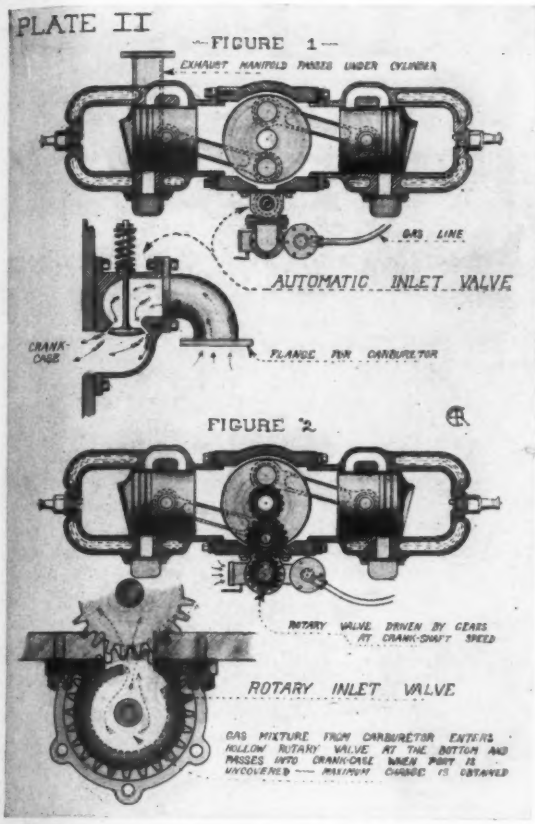


PLATE II
—FIGURE 1—
EXHAUST MANIFOLD PASSES UNDER CYLINDER
GAS LINE
AUTOMATIC INLET VALVE
CRANK-CASE
FLANGE FOR CARBURETOR
FIGURE 2
ROTARY VALVE DRIVEN BY GEARS AT CRANK-SHAFT SPEED
ROTARY INLET VALVE
GAS MIXTURE FROM CARBURETOR ENTERS HOLLOW ROTARY VALVE AT THE BOTTOM AND PASSES INTO CRANK-CASE WHEN PORT IS UNCOVERED — MAXIMUM CHARGE IS OBTAINED

Various methods of increasing the volume of gas mixture taken into the crankcase

charge, so the mixture continues to flow in, even though the pistons are traveling inward. Maximum engine speed is limited to the volume of gas that can be admitted through the ports during their brief opening.

Figure 2 shows the exhaust and cylinder intake cycles. The incoming fresh charge strikes the baffle plates and is diverted so as to push out the burnt gases of the previous combustion. It is obvious that if a scanty charge of gas is drawn into the crank-case, that less gas will be injected into the cylinders and all the exhaust gases will not be expelled. As the speed of the engine increases, the amount of gas drawn into the crank-case decreases. Thus less gas enters the cylinders and this is diluted with the burnt gases. Finally a point of dilution is reached where the mixture can not be ignited, then the motor spits and misses and will not resume smooth operation until it is slowed down. Anyone who has run an outboard motor at full speed out of the water knows that it spits and sputters at abnormally high speed. The foregoing condition explains the cause. So the engine speed is limited to the degree of rapidity with which the gases can be handled. Crank-shaft speed is one of the factors to be considered in computing horse-power. In fact, horse-power is in direct proportion to engine speed. So, if means can be employed to increase the engine speed, greater power results. Improved designs have brought this condition about, and the 4 horse-power 2000 revolutions-per-minute motor of yesterday is the 8 h.p., 4000 r.p.m. motor of today.

A number of conditions are responsible for this increase in speed—incidently, increase in power—but all of the conditions have a direct bearing upon the salient factor: quicker handling of the gases.

The motor illustrated in PLATE I is a four-port motor. This differs but little from the more common three-port motor. In either type the mixture is admitted to the crank-case through a port uncovered by the bottom rim of the piston. As stated before, at high engine speed this port is open for a minute fraction of a second, and the speed of the motor itself is limited to the volume of gas that can enter during that brief period.

There are other ways of admitting gas to the crank-case. PLATE II shows several of these. In figure 1, an automatic suction valve is installed between the carbureter and the crank-case. The gas mixture is drawn into the crank-case during the entire outward stroke of the pistons, instead of being popped in during the brief opening of the ports. Obviously the tension of the valve spring must be very light. A stiff spring would defeat the purpose of the automatic valves, because a partial vacuum would have to be created in the crank-case before the valve would open to admit the gas mixture, and a full charge of fresh gas could not be drawn in. The condition is similar to pumping up a tire. If it requires 20 pounds pressure to open the valve in the stem, then 60 pounds pressure on the pump will put 40 pounds of air in the tire.

Even under the best of conditions, the automatic valve flutters and is rather noisy. And it is questionable whether or not it admits more gas to the crank-case than does the port of the three-port motor. However, a three-port motor, fitted with an automatic valve in addition, unquestionably admits more

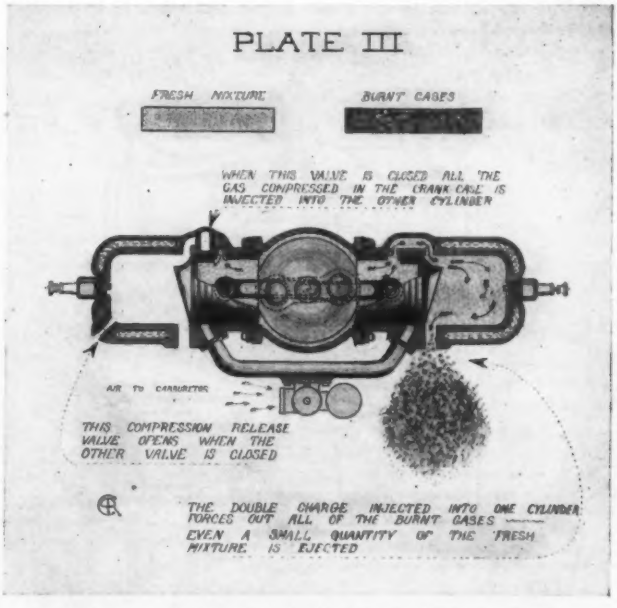


PLATE III
FRESH MIXTURE
BURNT GASES
WHEN THIS VALVE IS CLOSED ALL THE GAS COMPRESSED IN THE CRANK CASE IS INJECTED INTO THE OTHER CYLINDER
AIR TO CARBURETOR
THIS COMPRESSION RELEASE VALVE OPENS WHEN THE OTHER VALVE IS CLOSED
THE DOUBLE CHARGE INJECTED INTO ONE CYLINDER FORCES OUT ALL OF THE BURNT GASES — EVEN A SMALL QUANTITY OF THE FRESH MIXTURE IS EJECTED

The theory of easy starting. By closing off the crankcase to one cylinder a double charge of mixture is forced into the remaining one

gas at high speed—in other words, permits higher speed—than does either type acting singly. This combined type is gaining in favor.

This year sees one wide departure from the usual two-cycle design, namely: the adoption of a mechanically operated rotary valve to admit the gas mixture to the crank-case. Figure 2, PLATE II, shows the operation of the rotary valve. Undoubtedly this design is sound in theory and in practice. The only possible objection that could be advanced is that it involves complications because gears are employed to operate the valve. But this feeble objection is without logic. Gears have always been used in the four-cycle automobile motor without bringing down a storm of protests. The fact of the matter is, that heretofore the two-cycle motor has been gearless, so the use of gears seems to be a radical departure from accepted customs; and, as is always the case when radical changes have been made, a certain number of chronic hammer wielders have to start an anvil chorus. But their chorus will fade away like, "Yes, We Have No Bananas" and "Sweet Rosy O'Grady." Without dispute, the rotary valve is a marked advance in two-cycle motor construction. The area of opening permitted with this valve is almost without limit. The slot can be as long as the depth of the crank-case. Rotary valves have been tried out on four-cycle motors, but without success. But their failure in the four-cycle motor is no criterion that they will not serve satisfactorily on a two-cycle motor. The conditions are entirely different. In the first instance the valves were exposed to the hot gases of combustion; in the two-cycle motor only cool gas from the carbureter comes in contact with them. Furthermore, the oil mixed with the gas maintains constant, positive lubrication.

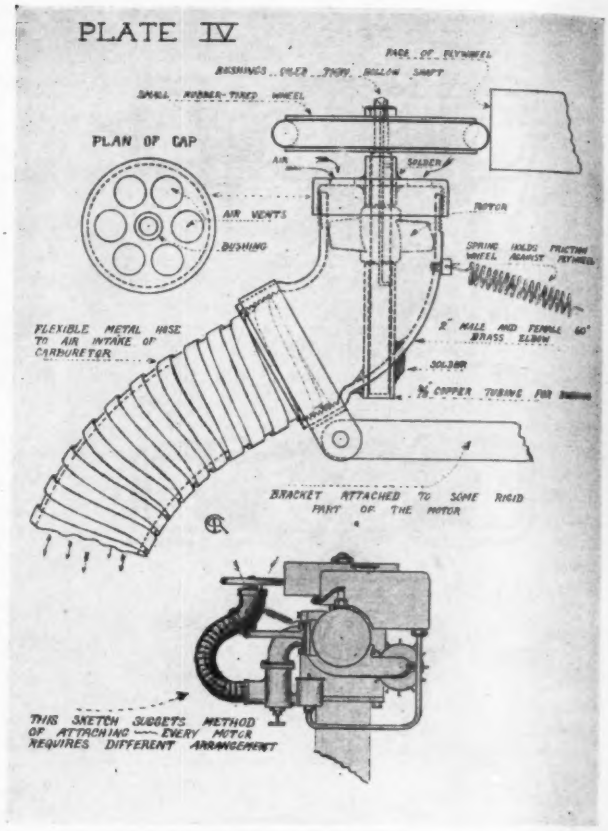
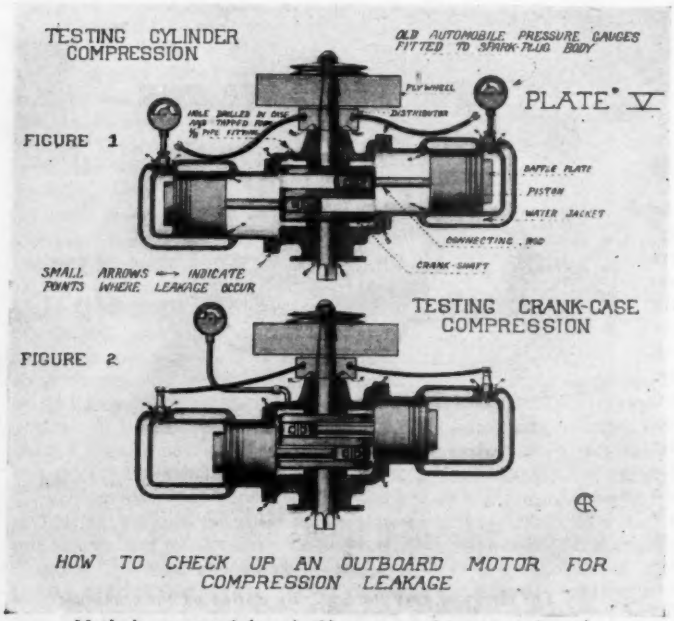


PLATE IV
PLAN OF CAP
AIR VENTS
BUSHING
FLEXIBLE METAL HOSE TO AIR INTAKE OF CARBURETOR
BRACKET ATTACHED TO SOME RIGID PART OF THE MOTOR
THIS SKETCH SUGGESTS METHOD OF ATTACHING — EVERY MOTOR REQUIRES DIFFERENT ARRANGEMENT

An improved supercharged which can be readily fitted to an outboard engine and which will increase the revolutions



Methods suggested for checking up on the compression of an engine, both in cylinders and crankcase

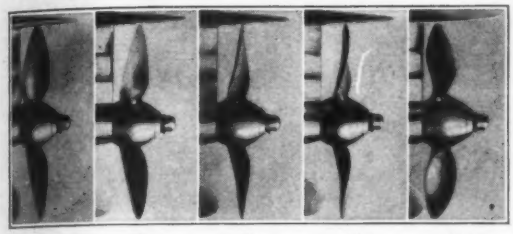
The rotary valve permits the maximum charge to enter the crank-case. Let us refer back to the four-port motor represented in PLATE I. Suppose the vacuum created in the crank-case were completely displaced with gas mixture. Even so, the width of the port must be deducted from the actual piston displacement to give the effective piston displacement. In the case of the automatic inlet valve, the tension of the spring deducts from complete displacement. But with the rotary valve, open throughout 180 degrees of revolution, a full charge is drawn into the crank-case and compressed. Higher engine speed results; more power is delivered.

The improved methods of injecting the gas mixture into the crank-case are largely responsible for the high-power, small-bulk motors of today. Of course, other factors have contributed, too. Improved baffle plates have brought about more thorough scavenging of the cylinders. High-compression heads have added power. But the compression results in pre-ignition and knocking. Light-weight, alloy pistons of special design have increased the crank-case compression. Coincidently they have created a greater degree of vacuum.

It is a combination of all of the fore-

(*Continued on page 258*)

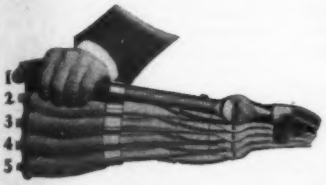
2 GREAT FEATURES ELECTRIC STARTING MULTI-FLEXIBLE CONTROL *on the NEW* 1930 CAILLE RED HEADS

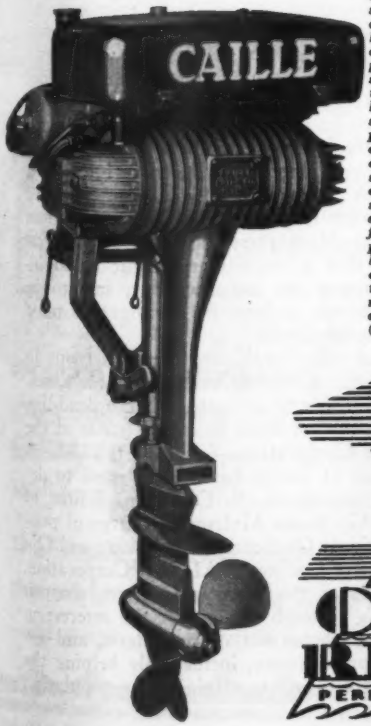


A B C D E

PERFECT CONTROL

Caille Red Head motors offer you perfect one-hand control. Everything is done from one control-lever—steering, throttle variations, speed changes through the Multi-flexible Control Feature.





This exclusive Caille Red Head feature is the marvel of all who see it. Through a simple, practical variation in the pitch of the propeller, the amount of "bite" it takes out of the water is controlled, thus giving speed changes without overworking the motor itself. Figure 1 shows the position of the control handle to get the corresponding propeller pitch, shown in "A" at the top. This gives high, or third speed forward. By pressing a button on the end of the control lever, speeds may be changed more simply than on an automobile, until five changes of propeller pitch have given you every speed variation, including neutral (Fig. D.) and also reverse (Fig. E).

Enthusiastically hailed everywhere as the last word in outboard motors, the new 1930 Caille Red Heads lead the field in finished performance. Their enthusiastic reception at the leading Boat Shows and Sportsman's Exhibits forecast the public trend toward outboard motors that really give outboard users the same flexibility of control they now enjoy in their motor cars.

Caille Utility Red Heads start in neutral at the touch of the hand on the starter button. A simple movement of the control lever shifts into slow reverse, for backing away from the dock. Three speeds forward—trolling, low, and high—may be obtained by further movement of the control lever. Any speed you desire is available through Caille's exclusive Multi-flexible Control feature, found in no other outboard motor, and instant "four-wheel brake" stops can be made by shifting from high to reverse.

Added to these are many other features, such as quiet, water-muffled exhaust; full ball-bearing construction that lengthens motor life and saves oil; and machined and balanced piston units for an even flow of power. Centrifugal cooling keeps your motor at the right temperature, even when idling. The motor can also be locked on the boat, preventing theft. Many other features make a Caille Red Head the logical outboard motor for you to select, for outstanding performance, ease of handling, and long life.

The beautiful new Caille Catalog shows the full Red Head line for 1930, and explains Caille's many wonderful features in detail. It will be sent to you free of charge. Just clip the coupon below, and mail it today.

CAILLE MOTOR COMPANY

6234 Second Blvd. Detroit, Mich.

There's a Great Dealer Opportunity with the NEW 1930 Caille Red Heads

Caille Red Heads for 1930 offer the features that the public demands, and can get in no other outboard. Think of the profit possibilities for you! Write or wire today for the new Profit-Building Franchise Offer. No obligation.

MAIL COUPON for CATALOG

CAILLE MOTOR COMPANY
6234 Second Blvd., Detroit, Mich.

Gentlemen:

( ) Please send me copy of your new Free Catalog for 1930.
( ) I am interested in the Caille Profit-Building Franchise.

Name_____

Address_____

City_____ State_____

CONTEST FOR OUTBOARD CRUISERS

A Prize Competition for the Best Illustrated Cruise Story Accomplished With An Outboard Engined Boat Announced by the Outboard Motors Corporation

RULES FOR STORY CONTEST

STORIES must be hitherto unpublished accounts of actual happenings, at least 1200 words long—typed manuscripts.

At least six clear photos with releases, suitable for illustrating article.

Any outboard motor, any make boat.

Boat at least 18 feet long with sleeping and eating accommodations for at least two people.

Actual names of people, actual locations, dates and duration of trip, etc. Excerpts from logs may be included—facts only.

Must be in hands of Outboard Motors Corporation by October 1st, 1930.

Judges will be C. F. Chapman, Ole Evinrude, and James Mulroy.

Prizes: First	$100.00	$100.00
Two Second Prizes of	$50.00	100.00
Five Third Prizes of	$10.00	50.00
A total award of		$250.00

Should two contestants in the judges' opinions tie for honors, each will receive his full share of prize money. If a full quota of contestants fails to qualify for the prizes offered, unallotted prizes will be withdrawn.

Outboard Motors Corporation will retain all stories and photographs—none returned—and will have full right to their use in publicity and advertising.

Winners will be announced by Outboard Motors Corporation on November 1st, 1930.

Mail all stories with photographs to Outboard Contest Editor, Outboard Motors Corporation, Milwaukee, Wisconsin, U. S. A. All stories to be considered for prizes must be in our hands not later than at close of business on October 1st, 1930.

RECOGNIZING the outboard equipped cruiser as a means of water travel of increasing popularity, the Outboard Motors Corporation of Milwaukee, Wisconsin, of which Ole Evinrude is President, has sought a means of bringing to a greater number of boat lovers information on the satisfaction and enjoyment to be obtained from the ownership of such a boat.

That a considerable number of these plants are already in use is attested by the fact that one western builder last season actually built and sold sixteen fully equipped outboard cruisers. Another western firm built several standardized outboard cruisers. In the east and in the south several builders have put out a number of such craft. Recent announcements indicate that additional builders will soon be supplying standardized outboard cruisers at prices well within the reach of thousands who wish to undertake the wonderful enjoyment that is offered on a coast-wise or river cruise.

The frank, outspoken purpose of the contest is to smoke out the experiences which owners of outboard cruisers have had and to present these experiences in entertaining form for the benefit of the boat fraternity.

The conditions of the contest are very simple and in themselves indicate pretty clearly what the Outboard Motors Corporation is after. Before we get to a tabular presentation of the rules of the contest, let us present one or two of the more important provisions with a fair amount of detail so that there will be no misunderstanding.

Probably the most important consideration is that all stories submitted must be based on actual happenings. This immediately excludes a lot of fiction writers who, with a background of water travel, could undoubtedly write a good Outboard Cruise Contest story without ever having been on such a cruise. Some good drawings or posed photographs would serve as the garnishment for the pudding and might take some of the prize money; but according to this rule, only stories that relate the experiences of an actual voyage, (not merely a few hours trip) are eligible for competition.

Another requirement is that clear, usable photographs, at least six in number, accompany each story submitted. The chief purpose of this requirement is to make the printed reproduction of the story interesting to the reader. "A photograph is worth ten thousand words," or "a picture tells the story," are well-known slogans that thoroughly express the value of pictures. It is conceivable that a cruise story might be so interesting that pictures are not necessary, but to be eligible for the contest, at least six photographs must accompany the manuscript.

There are other rules which are clearly set out in the tabulation above. Everyone, regardless of age, sex, or nationality, is eligible to compete, but the dead-line —the date on which they must be in the hands of the Outboard Motors Corporation—is Oct. 1st, 1930. A most competent set of judges has been selected to decide the winner, namely C. F. Chapman, Editor of MoToR BoatinG; James Mulroy, in charge of publicity for the National Outboard Association; and Ole Evinrude, President Outboard Motors Corporation.

So, you skippers of the outboard cruisers, sharpen up the pencils, dig through the log for the interesting story, select a few photos out of the album, and get in line for some prize money, incidentally helping the sport of outboard cruising to attain wider popularity.

Fit for a Commodore

BOOM! Here comes the Commodore in his Flamingo! Flashing color . . . dashing speed . . . luxurious fittings . . . superb riding comfort . . . no water-logging, no musty planks, no leak. Even the Commodore's white flannels and his ladies' daintiest frocks are as safe in his Mullins as in his big new car.

The Flamingo shown above—in fact, any of the eight new models described on the next page, will create an utterly new conception of outboard motor boating joy.

Only Mullins can give you a puncture-proof, unsinkable hull in corrosion-resisting metal . . . a hull that needs no upkeep, even if left unprotected on shore all summer and winter.

Swanky, sturdy, seaworthy Mullins boats are ultra-modern in every line and hue, dignified by good taste . . . dollar for dollar the best boat buy on the market.

Mullins Thirty-Sixth Anniversary Fleet

AMERICA'S most beautiful pleasure craft brilliantly colored in enduring marine lacquer, offering flashing speed, luxurious comfort, lifeboat safety with indestructible, puncture-proof, leak-proof, unsinkable hulls of corrosion-resisting metals, for salt or fresh water service.

CONDENSED SPECIFICATIONS MULLINS OUTBOARD BOATS

MODEL	Length—Feet	Beam—Inches	Transom Height—Inches	Weight Pounds	APPROX. SPEED Miles per Hour — Size of Motor			
					A	B	C	D,E
PENGUIN	14	48	—	230	Rowboat			
LARK	14	52	15½	270	10	12	—	—
DOLPHIN	15	56	15½	425	—	20	27	30
ALBATROSS	15	56	15½	490	—	20	27	30
FLAMINGO	15	56	15½	550	—	20	27	30
ROADSTER	15	57	*	370	—	25	32	35
TORPEDO	13½	51	14½	200	—	40 to 50		
TARPON †	13½	51	14½	225	—	40 to 50		

* Adjustable 13", 15½", 17" † Torpedo with double cockpit

The Mullins Boat Book

Complete specifications, colors, prices and valuable information every man will welcome before he buys a boat . . . all in the Mullins Boat Book. Get your copy now.

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301 New Garden Street, Salem, Ohio

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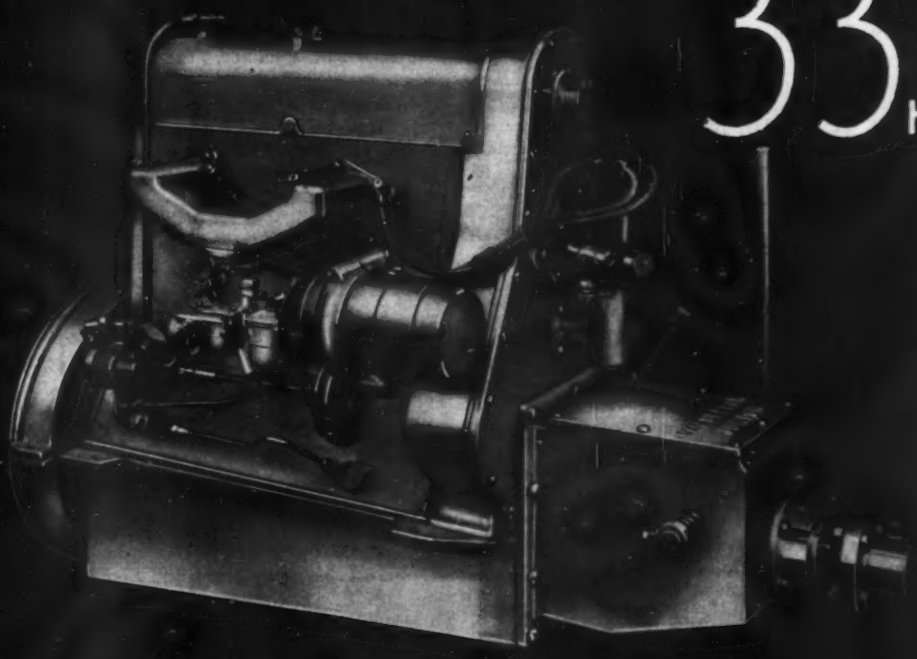
THE VAN BLERCK JUNIOR

33 H.P.



The INBOARD motor that has modernized the small motor boat. For 1930, increased horse power. Thirty-three horse power at 3000 RPM. New features, increased bore, piston displacement 90 cubic inches, 2⅞ x 3½. • Adopted by the leading quality small boat builders in the United States and Canada. • Price complete, $390.00, which includes reverse gear, generator and electric starter. • Weight complete, 165 lbs., including generator, starter and reverse gear. • Not a converted automobile or motorcycle engine, VAN BLERCK engineered and VAN BLERCK built throughout. Write for latest catalog, showing how to convert your last year's outboard boat to a late model inboard.

VAN BLERCK MOTORS

RED BANK · NEW JERSEY

THE MONTH WITH THE OUTBOARDS

Items of Particular Interest to Followers of the Sport

BIG REGATTA IN MOHAWK VALLEY

TWENTY-TWO cities and villages in the Mohawk Valley, in Central New York State, affiliated in the Mohawk Valley Towns Association, will co-operate in staging the first annual regatta of this organization at Canajoharie, N. Y., Saturday, July 12, in what is expected to be the largest inland river fete ever attempted in this section.

The water carnival will be held on the Mohawk river over a five-mile stretch between Canajoharie and Fort Plain, N. Y., under the chairmanship of Mayor Harry V. Bush of Canajoharie, recently named by the association's council of directors to supervise the arrangements.

Preliminary details of the program already are in progress. Formal sanction of the meet on the river, which is canalized, has been secured from state canal authorities, who will co-operate in charting the course and maintaining passage for craft participating in the regatta.

Sanction for the meet also is being sought by Mayor Bush and his committee from the American Power Boat Association and the American Canoe Association, through which, it is expected, any records made may become official. An official referee from each association will be present; and the course will be surveyed by association representatives prior to the races.

Boat and yacht clubs throughout the state are being invited to participate. Committees already named include one each on races, equipment and course, prizes, reception, music and finances.

The co-operation of dealers in each of the 22 communities has been arranged, to assure interest wider than that of spectators. John W. Randall, former commodore of the Schenectady Boat Club, who resides in Scotia, N. Y., one of the valley towns participating, is chairman of the race committee; while the equipment and course group is headed by A. F. Bobilin, Fort Plain, N. Y., to whom inquiries for information in the various sections should be addressed.

The Towns Association has set a minimum attendance at 25,000, a number which will doubtlessly be exceeded, since the area embraced by the association has a population of more than half a million. The regatta will in reality be made a valley holiday, in that late afternoon and evening entertainment will be provided both in Canajoharie and Fort Plain, to include gala pyrotechnical displays, band concerts and dancing at night, and an extensive land-sports program during the late afternoon following the water contests.

Other communities which will co-operate in the fete, all affiliated with the valley towns association, are: Utica, Herkimer, Rome, Little Falls, Frankfort, St. Johnsville, Nelliston, Palatine Bridge, Fonda, Amsterdam, and Schenectady. The public press of the Towns Association has authorized an initial appropriation of $1000 toward financing the water fete.

TO THE VICTOR BELONG THE SPOILS

Franklin Cook, Evinrude dealer at Evanston, Illinois, is a very versatile young man. Not only is he one of the best known outboard motor dealers in the North Side of Chicago, but as commodore of the North Shore Outboard Club he has been very active in sponsoring races and regattas which have been held at Evanston, and is a speed pilot of note himself. The North Shore Outboard Club is a member of the National Outboard Association, and Mr. Cook is a booster for that organization.

Cook and his Evinrude Speeditwin captured the 11 trophies which adorn the deck of his Century Cyclone boat, during the past season. He is very well known in both Illinois and Wisconsin outboard motor competition and is as active as he is well-liked in the outboard fraternities.

OUTBOARD RACING IN THE POOL

Now that the sport of outboard motor racing has gained such tremendous popularity, you never can tell where the

(*Continued on page* 244)

Franklin Cook, Evanston, Ill., Evinrude dealer, with eleven trophies won during the past season

2¾ horsepower

FOLD-LIGHT—the smallest, lightest twin cylinder outboard

3½ horsepower

LIGHTWEIGHT—(folding)—most compact motor of its power

7 horsepower

SERVICE SPEEDSTER—the fast utility and family motor

14 horsepower

SENIOR SPEEDSTER—the electric starting runabout motor

35 horsepower

QUAD—four cylinders, the most powerful outboard motor

HERE is the widest power range available in any make of outboard motor today.

Here is the world's lightest twin cylinder outboard — and here is the world's finest, most powerful four-cylinder outboard. Elto offers *both* — with other models that are equally compelling values in their respective fields.

Elto motors are outstanding in modern features now most strongly demanded

Here are presented *two* electric starting models, each equipped with finely engineered *twelve-volt* starting-generating-lighting systems.

In the small motor field the most significant development in many years is the "jackknife" folding feature that *halves* the bulk and *doubles* the handiness and portability. And Elto offers the choice of *two* perfected folding models.

OUTBOARD MOTORS CORPORATION

Write for the new Elto catalog fully describing the complete Elto line.

Elto

ELTO DIVISION, Outboard Motors Corporation

Ole Evinrude, President . . . 3181-27th St., Milwaukee, Wis.

BUILT IN CANADA
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UNIVERSAL WATERCRAFT, INC., NEW YORK CITY

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J. J. BURCK, JR., CITY ISLAND, N. Y.

P. W. HARE, PORT EWEN, N. Y.

WOOD BROTHERS, MAMARONECK, N. Y.

PEARSON MOTOR SALES, PORTCHESTER, N. Y.

LYON BROS. CONTRACTING CO., EAST SETAUKET, N. Y.

CHAS. STEIN & SON, WEST SAYVILLE, N. Y.

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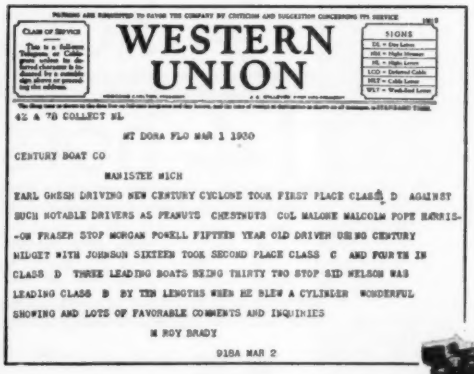
WESTCHESTER WATERCRAFT, INC., NEW ROCHELLE, N. Y.

BERYL SEELEY BOAT CO., SYRACUSE, N. Y.

Famous *Century* Outboards

Three Race Winners:



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CENTURY BOAT CO

MANISTEE MICH

EARL GHESH DRIVING NEW CENTURY CYCLONE TOOK FIRST PLACE CLASS D AGAINST SUCH NOTABLE DRIVERS AS PEANUTS CHESTNUTS COL MALONE MALCOLM POPE HARRIS--ON FRASER STOP MORGAN POWELL FIFTEEN YEAR OLD DRIVER USING CENTURY MIDGET WITH JOHNSON SIXTEEN TOOK SECOND PLACE CLASS C AND FOURTH IN CLASS D THREE LEADING BOATS BEING THIRTY TWO STOP SID WELSON WAS LEADING CLASS B BY TEN LENGTHS WHEN HE BLEW A CYLINDER WONDERFUL SHOWING AND LOTS OF FAVORABLE COMMENTS AND INQUIRIES

M ROY BRADY

918A MAR 2

$225.00—Midget a . . . . . 10'8"

$250.00—Cyclone b & c . . . 12'8"

$345.00—Hurricane d & e . . 13'8"

Winning Drivers in 1930 Will Drive CENTURY Winners

Two fast family runabouts:

$535.00	**Traveler DeLuxe**	*Both*
$395.00	**Traveler Jr.**	**17' by 5'**

In building the finest quality outboard in the entire field of boatdom, Century has spared neither time, money nor materials. The fastest and most capable performer of its type. Don't envy your neighbor. Pride of ownership is yours when you own one of the Travelers. They were designed by the noted John L. Hacker.

CENTURY BOAT COMPANY

MANISTEE, MICHIGAN

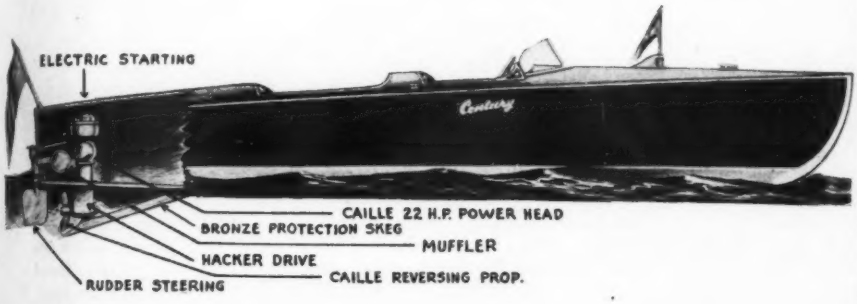
The Most Progressive Dealers Sell the CENTURY Line

Advertising index will be found on 3rd last page

NEW
Distinctive *Century* Inboards

Remarkable performance qualities in two splendid inboards that are truly the most amazing creations of the year.

MERMAID
$845.00 f.o.b.



On Display and Demonstration Everywhere

17′ x 5′ — 22 H. P. — 22 m. p. h. —
6 passenger—Complete Control

Portable as your Outboard—Able as the finest Inboard

ARISTOCRAT
$1,785.00

Hacker Drive *Century Built* *Hacker Design*

Powered by Universal—The "Blue Jacket"—45. Truly a Masterpiece that is years ahead in every phase of performance. New, softer riding action: Control that is gently sensitive to your every touch. Custom built to highest specifications for owners of discernment. See the livest dealer in your town, or Write or Wire

Century Boat Company
MANISTEE, MICHIGAN

The Most Progressive Dealers Sell the CENTURY Line

Built in Canada
by
Peterborough Canoe Co.
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See these Dealers in the U. S.

G. E. Steele, Schenectady, N. Y.

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Sarah-Vanderventer-Service Sta., St. Louis, Mo.

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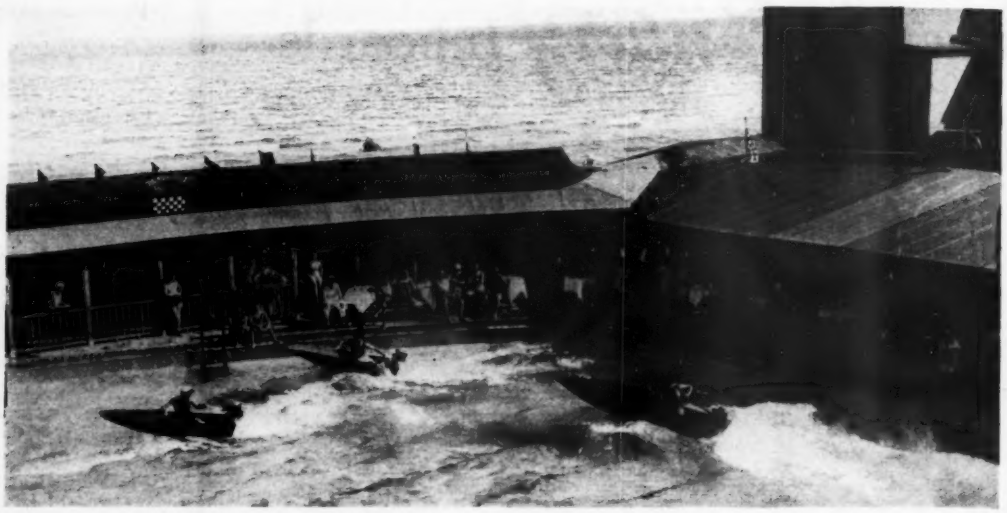
S. Clyde Kyle, San Francisco, Calif.

THE MONTH WITH THE OUTBOARDS

(*Continued from page* 240)



No end of novelties in outboarding. Three Evinrude and Lockwood-powered boats racing in the Deauville pool at Miami

next outboard race will be in progress. Down at Miami, Florida, these three tiny boats, powered with Evinrude and Lockwood Motors, have taken up, as the latest fad, racing in the pool at the Deauville, Miami, Florida. Outboard motor races such as this are receiving the enthusiastic interest of spectators everywhere and a larger number of participants are enjoying the thrills of the sport from year to year.

RESORTER GETS WATER TRIALS

An accompanying photograph shows one of the new Resorter model outboard runabouts designed by Gordon B. Hooton getting its first water trial under rather adverse conditions. As the weather was still cold, cakes of ice were found floating all over the surface of the water and it was necessary to be constantly on the alert dodging these to avoid a catastrophe. Despite this, the Resorter gave a wonderful demonstration of its ability, proving its speed and smooth running. The motor used in the trial was a 1928 Evinrude Speeditwin and it was observed that the hull refused to squat at any speed and carried its full load beautifully. The Resorter model is an extremely wide and roomy 15-foot family type runabout constructed with cedar planking and mahogany decks.

KANGAROO HUNTING BY WATER

When the Penn Yan Boat Company shipped a Penn Yan Super Buzz Outboard Runabout to Aleck Gennan at Warrnambool, Australia, over a year ago, they had no indication to what service it would be put.

A few weeks ago, they received a letter from Mr. Gennan, informing them of the excellent performance of the boat and of the satisfaction of its service to him in kangaroo hunting!

Equipped with a Johnson big twin engine, Mr. Gennan's craft has achieved high speed, astonishing even the racing fans along the Gleney River.

The hunting trips are run along the river above Warrnambool, frequently over fifty miles from the nearest homestead, and Mr. Gennan states that his Penn Yan Super Buzz has worked out much better than horses, which he had formerly used—firstly because of the greater speed of the boat, and secondly because of her great comfort. It takes some speed to catch a kangaroo!

SEA SCOUTS TRAIN WITH OUTBOARDS

The Tampa Sea Scout Troop believes that a well-rounded training and experience in things nautical now includes a knowledge of outboard-motor-powered boats, as well as other types of water craft.

Accordingly, these eight Sea Scouts spend a three-day encampment on Davis Island near Tampa, Florida, learning how to operate and maneuver their Evinrude-powered runabouts.

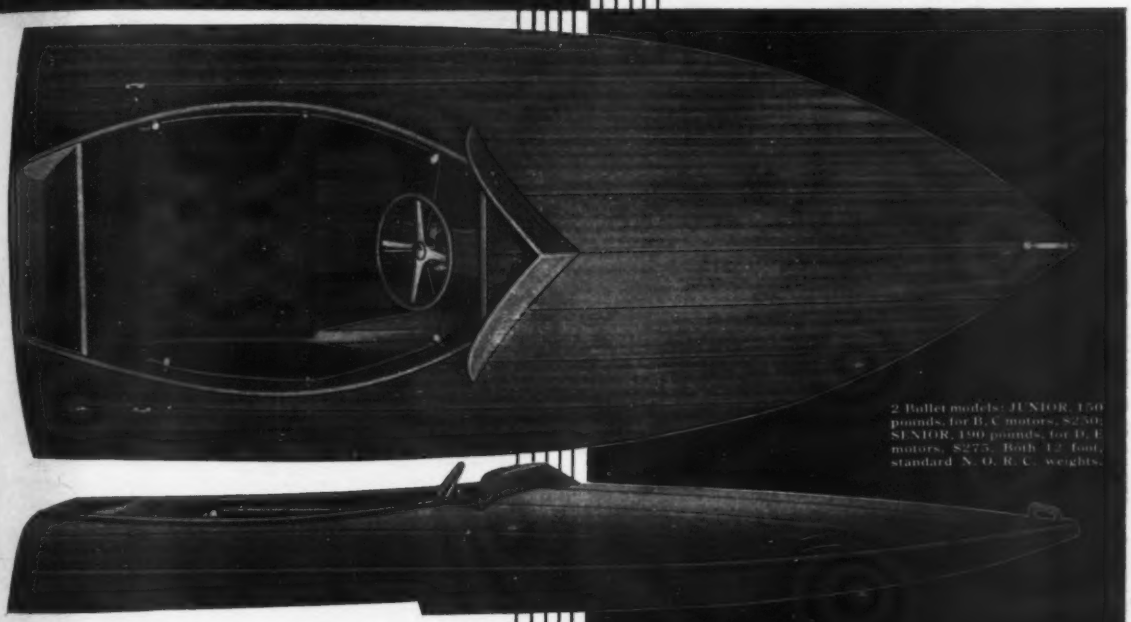
Outboard-motor-powered boats have now become so popular, due to their moderate cost and inexpensive upkeep, that no water-loving person has really obtained the full experience until he has become well acquainted with this type of

(*Continued on page* 246)

The Hooton Resorter runabout dodging ice cakes on a trial Winter run

THE 1930 BULLET

AMERICA'S MOST RIGIDLY BUILT FAST RACING HULL



2 Bullet models: JUNIOR, 150 pounds, for B, C motors, $250; SENIOR, 190 pounds, for D, E motors, $275. Both 12 foot, standard N. O. R. C. weights.

The 1930 BULLET is faster . . . far speedier than the championship BULLET of previous seasons. It is the most rigidly constructed of outboard racing hulls.

With planking of 3/8 inch Philippine mahogany, built over a 5/8 inch x 2 inch frame—with ribs spaced 7 inches—with solid mahogany step, the entire hull is completely reinforced by two metal stringers anchored to the transom and six stations forward of the advanced stern (patented feature).

Another feature is built-in stabilizers—you can bank the turns "wide open"—a decided BULLET advantage.

Look to the 1930 BULLETS for racing laurels. They have the speed, the rigidity, the streamline class which every pilot wants. Drive 'em wide open — ruff the waves and wakes — the BULLET will take it, stand it and come through race after race in A-1 shape. *Mail coupon for catalog giving full specifications.*

DEALERS: *a real merchandising plan for profit building backs the Boyd-Martin franchise. Write for particulars.*

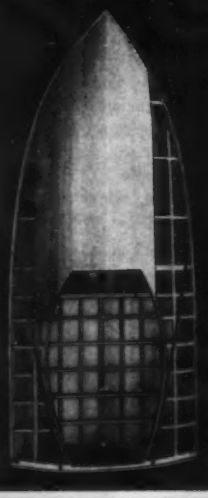


Diagram shows underdeck construction. Note exclusive metal stringers anchored to transom and 6 stations forward. Complete BULLET equipment includes: Ross steering wheel with remote control. Kapoc cushion, paddle, polished handles, copper drip pan. Planking and solid deck of mahogany, natural finish.

BOYD MARTIN BOAT CO. DELPHI, INDIANA U.S.A.

BOYD-MARTIN *Boats*

BOYD-MARTIN BOAT CO., 1078 Lee Street
Delphi, Indiana

Send catalog showing new 1930 boat models —racing, runabout and family boats.

*Name*_____

*Street*_____ *City*_____ *State*_____

THE MONTH WITH THE OUTBOARDS

(*Continued from page* 241)

Signor Girompini, Milan racing driver, who set the Italian Class C record at 37.6 m.p.h. with a Caille motor

boat. Electric starters, which are now found on the Evinrude 22 horsepower Speeditwin, do away with the necessity for hand cranking and brings to outboard motor boating a degree of comfort and luxury never before known. The Speeditwin motor is, incidentally, the winner of practically all Class C races and records during the past year and holder of national Class C championship.

CAILLE SETS NEW ITALIAN RECORD

Flashing down the famous blue waters of Lake Como at a speed of 60.5 kilometers an hour, Signor Girompini, well-known outboard racing driver of Milan, recently set a new Italian speed record for Class C motors. The tests were held under the auspices of the Unione International du Yachting Automobile, commonly known as the U. I. Y. A. The speed made corresponded to 37.6 miles per hour according to the American method of calculation, and is a very respectable record for Class C motors in this country.

In view of the enormous interest in motorboating of all kinds that has sprung up in Italy, and the very excellent automotive designers that this ancient country possesses, it is extremely flattering to American outboard motors to have this Caille model selected for the speed record. Moreover, it serves as another example of the soundness of American design and construction, which many Europeans doubted because of our unusual straight-line production methods. The Caille distributor for Italy, Signor Eugenio Silvani, of Milan, is planning to set new records in all classes with the 1930 Red Head models which have just reached him from this side.

NEW COUNTRY HAS FIRST CHAMPION

No one would think of Little America, the new land that Commander Byrd has discovered, as having a very large group of outboard enthusiasts among its population, for ice-boating would seem to be more the type of sport that would prevail in this far-off land. However, it actually has a speed champion in Hub Meyers of Charlevoix, Michigan, who won the Commander's Cup at Albany last year in his Class C hydroplane Little America, powered with a Caille Streak model motor.

Officially, Hub races under the colors of the Charlevoix Boat Club, but in seeking a name for his speedster, he was swayed by the fact that there was an America that had no champions of any kind, although the very name is associated with championships in sporting circles all over the world. Accordingly, he christened his craft with the name of the far-off Antarctic land in which he was so interested, and last July 4 he gave the orphan country its first, and probably only, speed championship on the water, when he captured the Commander's Cup.

Since this trophy is competitive, and must be defended each year, 1930 will again see the Caille-powered Little America speeding over the waters in its defense, with Hub Meyers at the tiller. It has been suggested that the Class C championship of the poles could be settled by a match race between Little America and another craft to be called Miss Greenland, but so far no champions have appeared to defend the honor of the Arctic against Hub Meyers, Antarctic flyer.

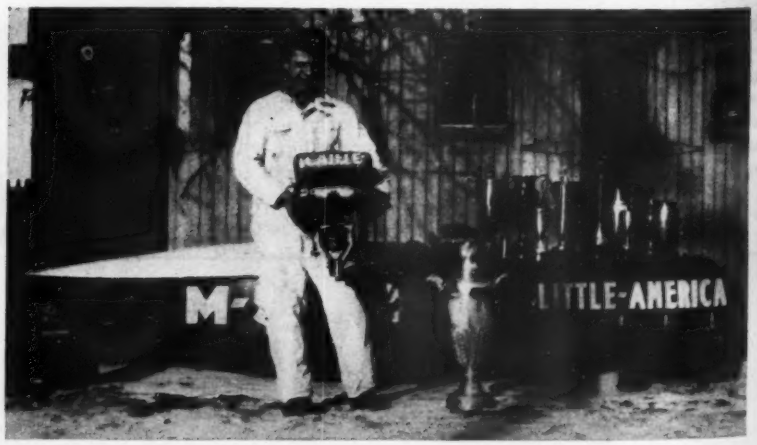
MULLINS MANAGERS

The Mullins Manufacturing Corporation of Salem, Ohio, manufacturers of the famous Mullins metal boats announce the appointment of Al Buffinton of Fall River, Mass., as zone manager for New England and northern New York state.

Al Buffinton, the daddy of the outboards, brings to his new position a wealth of experience in the building, marketing, designing and racing of outboard boats.

Al is familiarly known to every one in the marine industry for his stellar performances. His outstanding sportsmanship has won him a name second to no one in the outboard

(*Continued on page* 248)



Hub Meyers of Charlevoix, Michigan, and the boat with which he won the Commander's Cup at Albany last year

YOU ARE SURE OF CERTAIN IGNITION WITH A WEATHER-PROOF,

Water-proof Eveready Hot Shot . . .

THE EVEREADY HOT SHOT is absolutely water-proof — it's enclosed in a husky steel case that keeps out water, salt-spray and moisture. No matter how the sea rolls, when your outboard motor is hooked up to this hard-hitting, long-lasting package of electrical energy you can be sure of coming first into port every time.

Eveready Dry Cells have the same tireless energy—they're best for boats with inboard engines using water-proof battery boxes. All Eveready Batteries are sold in every port. For sure power—for long-lasting power—ask for EVEREADY BATTERIES!

NATIONAL CARBON COMPANY, INC.
***General Offices:* New York, N. Y.**
***Branches:* Chicago Kansas City**
New York San Francisco
Unit of Union Carbide UCC ***and Carbon Corporation***

THE MONTH WITH THE OUTBOARDS

(*Continued from page 246*)

The 16-foot Stevens Sport Runabout is a fine craft

industry. He is a prominent member of the R. C. 2, vice commodore of the New England Outboard Motor Boat Association and a national director of the newly-formed Outboard Drivers' Association. Buff is experienced in outboard racing from the days of wooden hulls and iron men and he is popularly known as the Iron Man.

Clinton S. Scholes of Essex, Conn., has been appointed as zone manager for the eastern territory comprising metropolitan New York and Long Island, New Jersey, eastern Pennsylvania, Maryland, Delaware and the coastal cities of Virginia.

Clint was teethed on a marlin spike and Stockholm tar. His home on the Connecticut River is situated in the heart of the shipyard district that in olden days placed the American flag in all parts of the world. He brings to his new territory an intimate knowledge of boats and successful merchandising experiences.

He was one of the original Johnson Motor dealers in the state of Connecticut and gave up his dealership in 1929 to travel for the Eastern Service Marine Co., New England distributors. His genial rotundity will be seen at many regattas through the East this year.

Mr. Scholes is a member of the R. C. 2, N. E. O. M. B. A., and Brooklyn Engineering Club.

A SPORT RUNABOUT BY STEVENS

The Stevens Tank & Tower Company of Auburn, Maine, have designed an attractive new outboard sport runabout, 16 feet long and 4-feet 8½-inch beam. The entire boat is constructed of first quality dark Philippine mahogany except the frames, keel and stem which are of oak. All fittings are nickel-plated bronze and the upholstering is Russialoid. The bottom of the boat, inside and outside below the water line, is finished in marine green paint, and above the water line in red mahogany and best marine varnish. The windshield is adjustable to any angle and may be tipped down flat upon the deck. Trial runs have established the fact that the Stevens boat is particularly fast for its size.

PACIFIC COAST CHAMPIONSHIPS

During the course of the coming season it has been decided that Seattle, Portland, Northern California, and Southern California are all to have individual sectional championships. The exact dates for these regattas have not as yet been set, but it is known that the Pacific Coast championship will be held at Lake Merritt, Oakland, California, on September 9.

At the sectional championships only those who have placed first, second or third in a sanctioned event this year will be eligible in each class. At the Pacific Coast championship the first three winners in the sectional championships will be eligible, making twelve starters in each class in the Pacific Coast regatta.

STATUS OF COLLEGE DRIVERS

At the request of the National Outboard Association, Professor French of Ohio State University, at a recent meeting of the Intercollegiate Conference of Faculty Representatives of Chicago, alluded to the question of the amateur status of outboard racers. To quote from the minutes of the meeting: "Professor French raised the question of the athletic status of persons who compete in outboard motor boat races and it was ruled that outboard motor boat racing is not to be considered an athletic sport, providing the drivers compete under Classes 1 and 2 of the National Outboard Association. In these classes only trophies or merchandise prizes are awarded." Writing to Secretary Hoehn of the N. O. A., Professor French brings out the fact that participation in Divisions I and II would not jeopardize a student's eligibility in the Western Conference, but that participation in Division III would raise a serious doubt as to hs eligibility.

FERGUSON CONTENT WITH NEW RULES

H. G. Ferguson, world's fastest outboard racing pilot, commenting recently upon (*Continued on page 250*)

Gar Wood, Jr., son of America's premier motorboat racing pilot, in the outboard craft he drove at the Miami Beach Junior Regatta

FINISH FIRST WITH BALUBRICOTE

THE BOTTOM COAT *for* FASTER BOATS

. . . and Here's Proof They Do Finish First . . .

23 American Records!

All Unbroken!.....To the Credit of Balubricoted Hulls!...

Also the Good Will or Experience of these

4 Champions

Classes A, B, C, D

Class E Still To Be Heard From

BILL LYON with "Baby Brontosaurus II," the Record-breaking CRANDALL COMET.

D. A. HASKINS, CLASS A CHAMPION:

"I wish to say that I believe that Balubricote certainly gives a wonderful bottom, and one that is about the easiest to take care of on a racing hull.

"Very truly yours, D. A. HASKINS."

H. G. FERGUSON, CLASS B CHAMPION:

"H. G. Ferguson, National Class B Champion and holder of sixteen American Records and two world's records, winner of the International British 'Field' trophy and the man who has made the fastest mile in an outboard drives an Elsinore boat painted with Balubricote.

(Signed) "COMM. MACKAY."

CARL KOEFFLER, CLASS C CHAMPION:

". . . I use Balubricote on my Elsinore hull . . .

(Signed) "CARL KOEFFLER."

DICK UPSALL, CLASS D CHAMPION:

". . . regarding 'Balubricote' wish to state that I have used your 'bottom coat' in many races and have always found it the best thing on the market for this purpose. Also I used it on the bottom of my boat, 'No Foolin', with which I successfully won the 1929 National Out-Board Championship.

(Signed) "DICK UPSALL."

BILL LYON, AMERICAN RECORD MAKER:

"I have always used Balubricote on the bottom of my racing hulls and have found it very satisfactory. I first used it on my sailboat and had such good results that when I took up outboarding I insisted that my Crandall Comet 'Baby Brontosaurus II" be Balubricoted.

(Signed) "BILL LYON."

B. A. WHEELER, AMERICAN RECORD MAKER:

"I have made two records on Balubricote, and will say it is the smoothest surface that I have found for the bottom of my racing boat.

"Yours for a slicker bottom, B. A. WHEELER."

Balubricote on Your Boat Means 10% More M. P. H.

Get it from your dealer or the makers

Quart, enough for 1 coat on 140 sq. ft., $2.50

BAHL CHEMICAL CO., Manufacturers, 194 Elm St., FALL RIVER, MASS.

Raymond V. Morris, San Diego, Calif.
Fitz Gerald Co., Norwalk. Conn.
Marine Sales & Service, San Pedro, Calif.
H. Heyworth Davis, London, England
Suomen Voimavaunu Co., Helsinki, Finland
Higgins Industries, New Orleans, La.
Bay City Hardware Co., Bay City
Old Town Canoe Co., Old Town, Maine
Henry H. Smith Co., Detroit, Michigan
Elmer J. A. Schneider, St. Louis, Mo.
The E. J. Willis Co., New York
Berkshire Motorcar Co., Albany, N. Y.
Pacific Marine Supply Co., Seattle, Wash.
Star Boat Co., Kansas City, Mo.

THE RACING SITUATION IN FLORIDA

By BRUNO BECKHARD

I NEVER took this Florida stuff very seriously but I did always want to see the Florida regattas. After a month of it I decided that a little gray home on the West Coast was almost a necessity—besides being cheaper to buy and campaign than a racing outboard—and as to regattas I am sadly disillusioned.

The racing situation had particular interest this year because the Florida delegates to the national meetings in January had at first protested that the new rules did not meet their conditions, and then advised that they would adjust their racing to the new code as rapidly as possible, and then went back to their original position that they would race under 1929 rules. A number of drivers from other sections seemed to think well of this action although obviously it meant giving up any possible chance of making recognizable records.

There can be no question about conditions in Florida being unique. There is also no room for questioning the fact that these conditions are exactly those the new rules seek to prevent. The Florida drivers are justified in their claim that they have no Division I or II drivers—and that is exactly the source of the trouble. There is plenty of racing, but, in view of the wonderful waterways, ridiculously little boating. This is not at all surprising in view of the facts open to any casual observer. The number of natives that have time to play on the water is naturally limited. The vast majority of tourists are well above middle age and of these only the semi resident fishing group contains any likely boat enthusiasts. The rest are contented to have their picture taken standing ankle deep in the Atlantic or the Gulf as the case may be. I have spent whole days on the waterfront on both coasts where conditions of water and weather were ideal for outboards—and where outboards were evident in large numbers—maybe two or three to a town. But then I have asked for so many simple things in various stores only to be solemnly assured that "we're surely all out of those" that nothing in that line surprises me any more.

On the other hand there is plenty of racing. I have been to half a dozen regattas in the last few weeks and passed up as many more. The drivers in all these events are the same group and the few visiting drivers from other sections are very careful not to take part for fear of complicating their standing at home. The drivers are of two kinds, either those racing for certain "outfits" or those racing on their own. The standard prizes are $40, $20 and $10 for each class and a regatta consists of two or three classes. The average driver takes part in two events. It does not take a great deal of figuring to prove that the idea of racing for these prizes is based on a fallacy—that is to say it is perfectly obvious that it cannot possibly pay to race on this basis—and the drivers are either subsidized or under the painful necessity of scoring every possible point in order to keep going. As one driver put it he was a consistent winner because he had to be, or starve.

A number of the regattas are put on for the entertainment of the winter visitors. The crowds are quoted as evidence of local interest in water sports but my humble opinion is that the crowds attend largely because they have no place else to go. I travelled a couple of hundred miles to a big regatta at which our party (including the two children) must have been a considerable percentage of the gallery. In fact I have wondered once or twice whether the only reason for having this or that regatta wasn't that somebody had put it down for that date.

At none of the regattas that I have attended have the outboard drivers been seriously included in the extra-racing program. They drive up, make the best of generally poor facilities, race, pack up and go home. They may make the racing but they certainly do not make the party.

I had looked forward particularly to Palm Beach and Mt. Dora—and perhaps I expected too much from these supposed classics. Mt. Dora is a small town and it certainly laid itself out to give everyone a welcome—and it is perhaps poor return for their splendid hospitality to classify the racing there as about third rate. At that it was better than Palm Beach in that the course was clearly marked and well patrolled and the schedule well maintained. The facilities for handling the boats were better. At Palm Beach I witnessed what seemed like an unpardonable breach of the rules of any kind of racing which went unchallenged because the officials were convinced they had no authority to act. Perhaps they were right but if a driver cannot count on that much protection from the governing committee he hasn't much incentive for racing under such conditions. And there is no good reason why any race committee should put itself in a position where it has no power to discipline anyone who chooses to ignore its authority. If ever there was an argument for organized racing Palm Beach furnished one. But it is in keeping with the picture. This form of racing is not a game, not a sport in any sense of the word. On the contrary *(Continued on page 266)*

A typical racing scene at a Florida regatta

RUMORS about the coming Vee Drive have been circulated back and forth throughout the industry for months. Now Gray presents it, the greatest forward stride in marine power application in decades.

Think of it! The roomy comfort of a 24-foot boat in an 18-footer—simply because the Vee Drive Gear places the motor back astern—and makes the entire remainder of the boat the place and space for boating pleasure.

Think of it! Undivided cockpit space. Not two or three passengers one place, the balance of the party another. But the whole crew enjoying the fun of boating *together*.

Think of it! More speed from the same power. The motor position is right. The load position is proper. The result is more miles per hour—and *noticeably more*—with the same motor.

Think of it! Easier handling of the boat. Greater maneuverability. A cleaner, drier, safer boat where passengers do not sit back against the motor.

Get the facts of the Vee Drive Gear today. Your boat dealer or builder has them, or will be glad to get them.

Attention Sail Yacht Owners! The Vee Drive Gear is being received enthusiastically for sailboat use. The man who has never installed a motor because of its awkward position and space demands can now have it and have it where it is out of sight and mind. *The engine will install in the cockpit* (outside). The Vee Drive Gear is placed inside, possibly under the companionway. The shaft and motor are at proper angles. Sailboat and yacht owners without motors and those with motors should investigate this new method of installation.

Gray Marine Motor Co.
680 Canton Avenue
Detroit, Mich.

Go to your Boat Dealer, Builder or Marine Architect TODAY *and get the facts on the*

GRAY Vee Drive

Designed by R. J. Poulliott, N. A., Detroit, Mich.

Designed by E. Lockwood Haggas, N. A., Atlantic City, N. J.

What is the best speed for your boat? . . . A reliable speed indicator will tell you easily what your boat's most efficient speed is. Then it will help you keep her at that speed . . . A glance at the dial—placed anywhere you wish it—shows just how fast you are running. Once you've used one, you'll never be without it, any more than you'd run a car without a speedometer . . . It's a great help in navigating by chart and compass—a life saver in a fog—and a constant check on your engine . . . These fully tested, dependable gauges are rendering valuable service on large and small boats of all types from cruisers to outboards . . . Passage through the water creates the pressure which is translated accurately into M.P.H. on the dial. There is no connection with motor power, nor towage of apparatus.

NATIONAL MARINE SPEEDOMETER
Outboard Model $18.50 each.
Models A, B, C & D for speeds up to 15, 25, 35, 60 M.P.H. $30.00 each.

NATIONAL LOG
Models H or J for 35 or 60 M.P.H. $150.00 each.

Ask your dealer and if he has none on hand, write us direct and give us his name.

THE NATIONAL LOCK WASHER COMPANY
40 Hermon Street - - Newark, New Jersey

LOOKING INSIDE THE OUTBOARD ENGINE

(*Continued from page 227*)

enough to carry the pistons past the compression of one pair of cylinders only. The magneto—if used—is similar to the one required for a Parallel Twin. It must produce two sparks per revolution spaced 180 degrees apart. One spark, in effect, passes through both spark plugs in the upper pair of cylinders, the other spark serves the lower pair. In a flywheel magneto of the so-called one-magnet type, there must then be two coils and two breaker mechanisms; in the two-magnet type a single coil and breaker mechanism may be employed but in that case a distributor to direct the spark first to one pair of plugs and then to the other is required.

Outboard motors of large piston displacement are of four cylinder construction for several reasons. If a twin, even of the opposed well-balanced type is made to develop twenty-five or thirty horsepower the cylinders are large and long, the motor is so wide as to be cumbersome, the reciprocating masses are large, the torque vibration is of too great magnitude and intensity, and the pistons and cylinders of such large diameter as to be difficult to cool.

The four cylinder construction, while somewhat more costly, eliminates nearly all vibration. The motor is compact in size even though the center of gravity may be somewhat higher than in a twin of equal piston displacement. The motor is more easily quieted than a twin both at the air intake and in the exhaust. The flywheel may be smaller in size and weight. And, theoretically at least, since the power of each pair of explosions is only half that of the twin, the size and strength of some of the parts—shafts and gears—in the lower unit can be somewhat smaller.

Perhaps the principle inherent difficulty with the four cylinder type is imperfect distribution of the mixture. If two carbureters are used the problem is as simple as in an opposed twin except that it is then difficult to attend and adjust both of them. But with one carbureter supplying two crank cases, each of which supplies two cylinders, there seems to be some difficulty in supplying exactly the same quality and quantity of mixture to each cylinder. This problem is not new in multi-cylinder engines—it is one of the most difficult faced by the automobile engineer in the design of the fours, sixes, and eights. It is perhaps even more difficult in the two cycle four cylinder motor because the mixture is first drawn into the crank case, is there subject to certain temperature and turbulence conditions, and must then be uniformly transferred to the cylinders. Careful design of intake passages and intake valves, whether of the third-port or rotary type, and the position of the opening of the by-pass into the crank case with reference to the moving parts therein, have largely solved this problem. The distribution of lubrication is of course also involved and adds complication.

Figue 12 represents diagrammatically the fixed, radial, four cycle type of engine construction. It has been popularized in the airplane field because of its comparatively light weight and the fact that each cylinder is fully exposed to the air current for adequate air cooling. It has also been adapted in the water cooled type for outboard motor service.

The crank shaft *C* has but one crank pin, *A*. On this is the master connecting rod connected to the piston in the top cylinder *F*. The five cylinders are equally spaced 72 degrees apart around the crank case. The connecting rods of the other four cylinders are attached to the big end of the master rod by means of hollow steel pins similar to piston pins, the motion of the rod on this pin being only of an oscillatory character. Since the master rod and its piston, and all the other four rods and pistons are connected to the one crank pin, the resultant forces acting on the crank pin bearing are rather complex as a total but result finally in this: that the force is largely one of a simple centrifugal nature primarily in the direction from the center of the crank shaft outward through the crank pin.

Assume the piston in cylinder number 1 to be moving upward on the compression stroke. The compression pressure is downward on the piston, yet the inertia force of number 1 piston is upward as is also that of the whole set of connecting rods and the pistons, particularly those in cylinders 3 and 4. As the crank approaches cylinder number 2, it is on the exhaust stroke, the inertia forces as before, are in the direction of cylinder number 2 and do not have the benefit of the cushioning effect of the compression pressure. At this time, however, cylinder number 1 is on the power stroke and the pressure is downward, helping to balance the upward thrust of the inertia forces.

Since the inertia forces can be resolved in effect into a more or less simple centrifugal force, it is possible to balance them with a revolving weight of the right mass. The crank shaft is therefore heavily counterweighted opposite the crank pin—the counterweights *S, S*.

Being of the four cycle type, each cylinder fires every other revolution of the crank shaft. Thus, the firing order for two

(*Continued on page 254*)

Advertising index will be found on 3rd last page

Here's One You've Never Heard Before! -

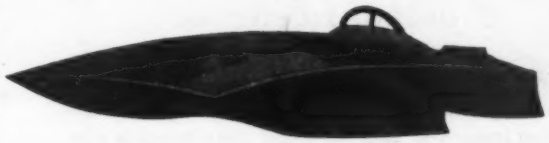
The Famous Cute Craft Hulls at Less Than Dealer Prices

Here is your opportunity to get a record breaking hull at a low cost that defies comparison.

SPECIFICATIONS: Length 8' 8½", Beam 46½", Freeboard 12". Planking: Mahogany sides and bottom. Deck: High grade waterproof plywood. Timbers and framework: Selected spruce.

The Bi-plane needs little introduction—it was the first standardized outboard hull to be placed on the market—and the many records it has established have set the pace for the outboard world. Here is a classy outboard that has constantly led in Class "A" and "B", with a brand of speed performance that has not quite been equaled; and as a repeatedly proven record maker, the Bi-plane is a real buy at **$75**

The Meteor is another record breaking Cute Craft model and it meets all the requirements of the powerful "B" and "C" motors from every viewpoint of speed, stability and construction. Here is a hull that is completely equipped with especially designed steering gear, remote throttle controls; and with an uncanny ability for taking the "corners" in high, the Meteor assures a record making performance for the low price of **$150**



SPECIFICATIONS: Length 11' 4", Beam 48", Freeboard 13". Planking: Selected mahogany sides and bottom. Deck: Acetated aeroplane fabric. Timbers and framework: Selected aeroplane spruce.

SPECIFICATIONS: Length 15', Beam 48", Freeboard 18", Deck height 28". Planking: Selected mahogany sides and bottom. Deck: Mahogany (Aquatite) veneer panels. Timbers and framework: Selected ash.

The Sea Horse is truly **the** runabout, since it has won every family boat race in which it has been entered—in one instance recording an official speed in excess of 31 m. p. h. with three passengers aboard. Thoroughly tried under every unfavorable condition, it is dependable and seaworthy; and completely equipped with steering gear, throttle and dash controls, twelve-inch cushions, padded back rests, running lights, etc., the Sea Horse combines every element of safe, comfortable water transportation. And unquestionably, it is a bargain at **$250**

There's no "nigger in the woodpile" in connection with this special Cute Craft offer! Every hull is brand new and in guaranteed A-1 condition. Every hull is built of high grade materials—beautifully finished—and meets the highest standards of hull construction! And considering the proven performing qualities of each and every one of the Cute Craft models, these are values you cannot duplicate. Not even by building or assembling a hull yourself!

This Is A Limited Offer—To Insure Delivery Act on Order Blank Now!

DEALERS! — HERE'S YOUR CHANCE TO GET A REAL FAST HULL FOR MOTOR DEMONSTRATIONS
FOR MOTOR DEMONSTRATIONS

CUTE CRAFT INCORPORATED, Fall River, Mass.

CUTE CRAFT, INCORPORATED
FALL FIVER, MASS.

(Check whichever items apply)

Gentlemen:

Enclosed is a remittance in the amount of $18.75 ( ) / $37.50 ( ) / $62.50 ( ) to apply as a 25% deposit on my order for a Cute Craft Bi-plane ( ) / Meteor ( ) / Sea Horse ( ) at your special price offer. Shipment is to be made via Express Collect ( ) balance C. O. D.—Freight Collect ( ) balance Sight Draft against Bill of Lading.

(Kindly write or print plainly)

If immediate shipment is not desired place preferred shipping date below.

.....

Name .....

Address .....

(No charges for crating) .....

This AC Tachometer is remarkably accurate, registering 0 to 8000 R. P. M.

This New AC TACHOMETER

Now $20.00

Just what you want for your outboard engine

Here it is, a new and improved AC Tachometer for outboard engines. Although the quality has been improved, this precision instrument is now offered at a new low price.

Its improved features include the following:

Aluminum frame insures lightness, greater strength, better bearing surface for drive shaft.

Shaft has the standard S. A. E. connection.

Nickeled pilot pin and hardened drive nut jaws prevent breakage or corrosion.

Snap ring prevents drive adapter from jumping off drive pin in rough water.

Soft threads in drive nut prevent damage to threads on flywheel shaft.

Among the waterproof features are live rubber gasket in front and rear of case, fibre gasket between case and frame, live rubber sleeve encasing shaft at head, waterproof casing of shaft.

This *new and improved* tachometer is now priced at $20 complete, slightly higher in Canada. Write for descriptive folder and in so doing kindly mention name of your nearest dealer.

AC

AC-SPHINX
Birmingham
ENGLAND

AC Spark Plug Company
FLINT, *Michigan*

AC-TITAN
Clichy (Seine)
FRANCE

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AC INSTRUMENT PANELS **AC OIL PRESSURE GAUGES**
AC TACHOMETERS **AC THERMO GAUGES** **AC AMMETERS**
AC AIR PRESSURE GAUGES **AC OIL FILTERS**

LOOKING INSIDE THE OUTBOARD ENGINE

(*Continued from page 252*)

complete revolutions is: Cylinders 1-3-5-2-4 and again, 1. Radial engines are nearly always built with an odd number of cylinders, 3, 5, 7, or 9 in order that this evenly spaced firing order may be obtained. In the five cylinder engine the explosions occur every 144 degrees of revolution of the crank shaft.

The relatively high weight of the connecting rods attached to the one crank pin creating rather high centrifugal force make this type of engine less well adapted to very high speeds than some of the other types discussed. Fixed radial airplane engines are seldom rated at more than about 1800 revolutions per minute normal, 2300 revolutions maximum. Modern outboard motors must usually be designed to turn up to 4000 revolutions per minute and sometimes considerably higher in order to develop the requisite power for good performance in relation to size and weight.

There is a weight saving possibility in the simple single throw crank shaft and the one crank case, but this is somewhat offset by the requirement for large and heavy counterweights on the crank shaft and by the individually cast cylinders. Nor does this type lend itself to low production costs. The cylinders must be individually machined, the crank shaft and the connecting rods must be very carefully machined and balanced, and the manifolding to reach all five cylinders is long and intricate. This type is nevertheless in successful operation and there is no reason why its inherent problems cannot be as successfully met as those in other types.

No one type of outboard motor is perfect. All outboard motor engineering is a continuous compromise.

The small single cylinder, the Parallel Twin, and the Opposed Twin, seem to approach the ideal in the smaller sizes. The Opposed Twin, in addition, appears to be the most satisfactory in the medium classes—up to 30 cubic inches piston displacement. Beyond that, the four cylinder type has met with the most popular reception. The five cylinder radial has proven successful in a still larger size. There are other types which can be successfully developed when the demand is apparent.

(*To be continued*)

OUTBOARD CRUISING ON LAKE HURON

(*Continued from page 230*)

carrots, celery, tomatoes, corn, lima beans and what not, and 12 quarts of the conglomeration. I had devoured a quart or so in the numerous tastings and added seasoning and ingredients by the hand or canfuls. Dinner was served on time and with the Evinrude party of seven and our four, it made quite a jolly gathering. The Commodore and Mary surely came through in their usual manner for the menu held shrimp salad, hot biscuits, ripe olives, lemon pie, cheese, salted nuts and coffee in addition to my contribution and flanked by a bottle or two of Soo Falls it certainly was a complete set-up. As we sat down Mrs. Evinrude remarked that she would never again feel sorry for us and the way we rough it. As we sat around the camp fire I watched rather fearfully for signs of indigestion on the part of our guests, who were not accustomed to my weird and godless manner of feeding, but there seemed to be no harmful results and the 12 quarts had somehow disappeared.

Tuesday morning we joined the Evinrude party and rode with them as far as the entrance of Narrow Bay where we re-embarked on Inez Mae II and ran into Narrow Bay and Little Bay Finne. As the names signify, these are long narrow bodies of water between mountain ridges and while it is beautiful, still to me it imparted a feeling of being closed in, as the rocks rise out of the water to a height of several hundred feet, and one can almost throw a stone across the opening.

Leaving Bay Finne early Wednesday morning, we had lunch at Little Current and, bidding good-bye to the Evinrudes, started for home. We shook out a sprit-sail we had carried for emergencies and with a fresh breeze found it helped our speed quite materially as well as aiding in steering and were soon scudding along at a lively rate. We passed Clapperton Island and Boyd Island Light, Spanish Mills, with the old rusty burner just a ghostly memento of former activity, passed through Little Detroit and finally made camp on Aird Island and while Mary and I were frying steak and getting dinner Norman and the Commodore picked eight quarts of huckleberries. They were nearly as large as grapes and hung in clusters. We again slept aboard and there was a long roll on the channel which seemed most soothing.

(*Continued on page 256*)

Advertising index will be found on 3rd last page

YOU CAN'T BUY A *Good* ROWBOAT AT THIS PRICE

WAS $369

NOW $200

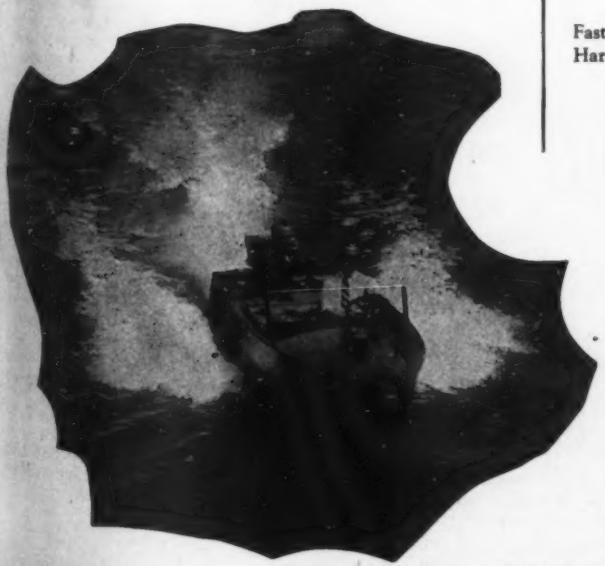
THE SPORTSTER

The liquidation of our Boat Division enables you to buy a brand new Laconia SportSter at this amazingly low price. There are a few more left in stock. Don't delay. Clip the coupon *now*.

EQUIPPED WITH

Bow Light
Stern Flagpole
Stern Light
2 Bow Chocks
Bow Cleat
4 Fender Hooks
2 Fenders
Paddle
Windshield
Steering Wheel
with Cable, Pulleys, and Fairleaders Installed.
Life Preserver Type Cushions
Battery Box and Strap
Ring at Transom
Switches
Completely Wired for Lights

The value of this equipment is about $100. It is included with the "SPORTSTER" at no extra cost.



A few "SPORTSTER" Hulls, equipped only with windshield, life preserver cushions, and forward cleat, at $150

SPECIFICATIONS

	SportSter
Length over all	15′ 11″
Beam over all	52″
Weight complete *(without motor)*	350 lbs.
Weight, crated	750 lbs.
Planking and decking	Philippine Wood (Individual planks)
Bottoms	Double planked, with cloth set in white lead between layers for watertightness, painted with anti-fouling bottom paint. Additional stringers besides keel and chines to provide required bottom strength.
Sides	Batten seam construction.
Ribs	Assembled with brass bolts, nuts and washers. Designed for maximum strength.
Fastenings	Copper or brass throughout.
Hardware	White nickel brass.

PRICES: F. O. B. Laconia, N. H.

LACONIA CAR COMPANY

LACONIA, NEW HAMPSHIRE, U. S. A.

LACONIA CAR COMPANY, Laconia, N. H.

Gentlemen: Enclosed find check for ☐ SportSter $200
☐ Unequipped 150

Ship to:

*Name*_____

*Address*_____

*City*_____ *State*_____

CROSS OUTBOARD MOTORS

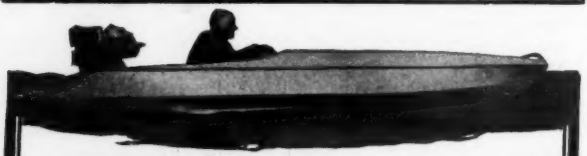
with Electric Starting

Complete Remote Control from Starting to Stopping, without Leaving the Driver's Position.

Dealers Write

Order now for Spring delivery!

CROSS GEAR & ENGINE CO.
3260 BELLEVUE AVE., DETROIT, MICH.



FOR MAXIMUM SPEED!

Solely on their performance in the past, PENN YAN racing craft are the largest selling outboard racing boats in the world . . . and the 1930 fleet will be still faster—still more seaworthy—still more capable of reeling off mile after mile of better performance than is possible with any other boat of similar size and power. Our new folder is ready . . . write for it today.

PENN YAN BOAT CO., INC.
14 WATER ST., PENN YAN, N. Y.
PENN YAN RACING BOATS

U. S. PAT. NO. 1747600

E.Z. CONVEYOR

OTHER PATS. PENDING

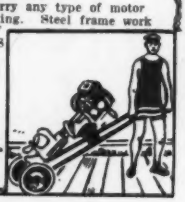
Every owner of an outboard motor should own an outboard E. Z. CONVEYOR. Do away with that strenuous work carrying your motor back and forth. Makes a very fine working stand. Gives you lots of clearance to work on any part of your motor—it also keeps your motor from toppling over and many other advantages. It simply pays for itself

PRICE $20.00 F. O. B. BROOKLYN

These Conveyors are extremely rugged in construction—carry any type of motor on the market, all metal parts enameled to prevent rusting. Steel frame work with 12" roller bearing disc wheels with 1-3/16" rubber tires. IMPROVED LATCH AND BEARINGS 1930 MODELS.

ON DISPLAY AT ALL GOOD MARINE DEALERS OR WRITE

E. Z. Outboard Motor Conveyor, Inc.
1363-1367 East 26th St., Brooklyn, N. Y.
Order today to insure early delivery
Telephone Navarre 7216



OUTBOARD CRUISING ON LAKE HURON

(*Continued from page* 254)

The following morning we passed Cutler and Blind River and crossed back to Cockburn Island, where we dined with the McLeods on McKenzie's Prime Mutton, though I am sure there is not a sheep on the island. We spent the evening playing bridge with the McKays and had a fine lunch of whitefish livers and again I must admit that the people of that north country certainly know their fish.

We left at 5:30 Friday morning, stopped at Little Cockburn, a small island on the Lake Huron side and headed across the Lake. There was a bit of a sea running, but we reached Presque Isle Harbor at 1:30 and went ashore for lunch. This is the most beautiful harbor on Lake Huron and it was with some regret that we hurried away, finally going ashore for the night near the old pavilion back of Middle Island. What tales could be told if the old dance hall could talk. It must have been in its prime when this country was logged 40 or 50 years ago and is now falling into decay, but one can easily picture the red mackinaws and wide sashes of the Michigan lumber jack as he responded to the call of Swing That Gal Behind You. There was quite a fog gathering on the Lake and during the night we could hear the steamers talking to each other outside.

The following day we were away at sun-rise, crossing Thunder Bay, stopping in at Oscoda and reaching Tawas at 5:30 p. m. in a rather heavy sea. After dining on the last of our venison we walked up town to a movie show, but before we had been in the theatre half an hour both girls were asleep and the Navigator and I were blinking rather badly. Too much fresh air and scenery to be interested in moving pictures.

Sunday came bright and clear, but with a heavy wind from the southwest dead ahead, which necessitated running at half speed. We stopped at the Augres for lunch, as it was too rough to eat in comfort while running, and followed the west shore of Saginaw Bay, reaching home just as the sun disappeared in the west.

It had been a wonderful trip and grows more wonderful each day as we re-live the hours. We burned 295 gallons of gasoline with never a changed spark-plug and no trouble except the one sheared drive pin. Our outfit, while heavy, has proved most seaworthy and we had traveled when and where we wished, always enjoying the hospitality for which the north country is so justly famous. Is it any wonder that we plan on coming season and look forward to again spending golden hours in the great out of doors, among the isle dotted waters of God's country?

A USEFUL OUTBOARD TOOL

A wrench of a special type has been invented by C. R. Jenkins, of Parma, Michigan, which is designed particularly to hold the fly wheel on outboard engines securely while the holding down nut is being tightened. The wrench consists of a heavy tape of braided fabric so attached to a lever handle that it can be adjusted around the rim of a flywheel or any similar large smooth surface and the action of holding it will clamp the flywheel rim more securely as greater pressure is exerted. The braid protects the plated parts of the flywheel against scratching or abrasion and the use of this tool permits the flywheels to be most securely attached to the engine shaft. The Lockwood Motor Division has tested this device and recommends it to all users of their engines. The device is inexpensive and should form a part of the tool kit of every outboard motor driver.

CAILLE AIDS POPULAR SPORT ON COAST

It has often been said that the man who named the Pacific Ocean probably had never seen any other great body of water. Yet, in spite of the storms and the incredibly long swells which roll in upon the California coast from this majestic expanse, outboard motor boating and kindred sports continue to rank high among the thousand and one diversions which California, the playground of the nation, has to offer.

Outboards have gained so much popularity upon the coast, and are followed with such general interest, that many unusual trophies are offered each year. The competition is naturally of the keenest, for while your outboard fan is typically an out-of-doors man, the California climate breeds a type that is engaged in racing almost throughout the entire year.

Typical of the California outboard enthusiast is M. C. (Marty) Martin, who annexed last year a big string of trophies by the simple process of combining a fast hull, a Caille Red Head motor, and a great deal of racing skill and experience. Marty came in winner in almost every event he entered, which is a striking tribute to man and motor alike.

Advertising index will be found on 3rd last page

Ace
Easier starting! Without a single moving part the starting exhaust gases of the "Ace", are released into open air through holes in a tube within the exhaust funnel. Water is scooped upward into this tube when running—thus sealing these outlets and compelling exhausting underwater. Manually-operated relief on "Chief".
Automatic Back-Pressure Relief

NOW—underwater silencing on both LOCKWOOD "Chief" and "Ace"

UNDERWATER silencing without loss of power—pioneered by Lockwood on the 14 H. P. "Chief" last year—is now a standard feature of the 7 H. P. "Ace"! Thus Lockwood gives you the one and only opposed, twin-cylinder outboard in Class A (under 14 cubic inches piston displacement), with quiet, underwater silencing!

What a pleasure to visit with companions! How *clean* it is—with exhaust fumes dissipated into a foaming wake! How appreciated by your neighbors on shore that you are not disturbing them when you steal away in the "wee" hours to fish or hunt!

The "CHIEF"—with Electric Starting, Generating, Lighting

The famous Lockwood "Chief" is now available with either cord or electric starting. At the touch of a switch you're on your way, and the electric starting motor then acts as a generator, recharging the battery. Spot and running lights are supplied from the powerful 12-volt battery which is standard equipment.

Send for the new, interesting catalog on Lockwoods which also completely describes 29 pound FOLD-LIGHT, world's lightest twin and product of Outboard Motors Corporation.

LOCKWOOD DIVISION, Outboard Motors Corporation
Ole Evinrude, *President* 2621-27th St., Milwaukee, Wis.

The LOCKWOOD Pilot

"Takes Hold When You Let Go"

All Lockwood motors are equipped with the Lockwood "Pilot"— the unseen hand that steers for you as you light your pipe, rig your tackle or go forward to rearrange the load. Amazingly simple and convenient. A friction clamp around the drive shaft casing "floats" between two cushion springs. When you turn the motor the clamp slips. When you let go it holds.

LOCKWOOD
OUTBOARD MOTORS

We Specialize in All Types of Aquaplanes

AQUAPLANES

Scientifically designed, beautifully balanced, for towing—

SKIBOARDS

(Patents Pending)

The outboard-motor-propelled aquaplanes—

AKWA-SKEES

(Patented Oct. 17, 1925)

The sporty self-balancing double aquaplanes—

SURF-BOARDS

Standard type and genuine Waikiki Model—

DOLPH

A game played on Akwa-Skees, Skiboards and Aquaplanes

Interesting Proposition for Outboard Boat and Sporting Goods Dealers

Write for details and discounts.

Speed Model Akwa-Skees

SKIBOARD CORPORATION

72 HUBBARD STREET BROOKLYN, N. Y.

National Distributors of Water Sports Equipment

Skiboards make thrilling races.

A DINGHY THAT STAYS WATER-TIGHT!

This "Old Town Dinghy" is made water-tight, and stays that way! Covered with heavy, non-leak canvas. No seams to open up in the sun. Exposure just can't harm it! Light but sturdy, a well-built, rugged boat. Stows snugly or tows well. Built by "Old Town"—a respected name wherever there's water! The stern is extra-strong and shaped for an outboard motor.

Free catalog shows canvas-covered outboard boats; big, seaworthy, all-wood, family boats; step-planes; rowboats; and all canoe types. Write. Old Town Canoe Co.; 185 Middle St., Old Town, Me.

"Old Town Boats"

Old Town Dinghies are standard equipment on Fairform Flyers

COMBINATION POST LIGHT AND FLAG POLE SOCKET

For Class I and Outboard Boats

The sturdy one-piece construction of this light makes it ideal as a towing post. Made in one-piece casting; brass or aluminum highly polished.

T. & B. Type B. & B. Type

We save you money. Write for catalog showing prices and be convinced. We specialize in repairing propellers.

Racing Propellers for Outboards

BRYANT & BERRY PROPELLERS

1282 LILLIBRIDGE STREET DETROIT, MICH.

MORE POWER

(*Continued from page 234*)

going factors that has given us the sturdy, powerful outboard motor of today. It would appear that the power peak has been reached, except by adding more cylinders. But no! The near future will see another radical improvement in two-cycle design by the application of a super-charger. It is inevitable that this will come, for its value is very apparent.

Let us refer again to PLATE I. Suppose that a complete charge of gas mixture were drawn into the crank-case, compressed without any loss through leakage, and injected into the cylinder. Even so, the piston displacement is always less than the cylinder capacity, regardless of the method by which the gas enters the crank-case, so there is always less gas shot into the cylinder than there is burnt gas to be expelled. Some of the burnt gas lingers in the cylinder to mingle with and dilute the fresh charge. This cuts down the potential power that would be possible if the cylinder were filled with pure, fresh gas mixture. PLATE I, figure 2, illustrates this point. The super-charger will remedy this. It will force a surplus of gas mixture into the crank-case, later to be injected into the cylinder, and will bring about almost perfect scavenging.

At the present time, a form of super-charging is employed to facilitate the starting of the motor. This is illustrated in PLATE III. The drawing is practically self-explanatory. A valve cuts off the gas from one cylinder so that all the compressed gas in the crank-case is shot into the other cylinder. In others words, this cylinder receives a double shot. More power is to be had from one cylinder receiving a pure mixture, than from two cylinders receiving a diluted mixture. Of course, this condition exists only while the motor is cold. For then there is considerable condensation in the crank-case and a shrinkage of the charge of gas mixture. Never-the-less, just as a pure mixture in the cylinder makes starting easier, so will a purer mixture at high speed make more power possible. The adaption of the super-charger to the two-cycle outboard motor is inevitable.

Even a crude, homemade blower will boost the power of any outboard motor. PLATE IV depicts a super-charger that any handy man can make. The assembly of the units of every outboard motor are different so no fixed design can be given that will fit every motor. But one should be able to gain a fair idea from the sketch as to how it can be done.

A 2-inch brass elbow, preferably of 60-degree angle, male and female design, is used for the body of the blower. A center hole for a bushing, and six holes for air admission, are drilled in a 2-inch brass cap, and this is screwed to the male end of the elbow. Another bushing is soldered in the elbow in line with the bushing in the cap. 5/16 or ⅜-inch copper tubing will serve for the bushings. A 3/16 or ¼-inch shaft, rotating a small fan with blades at a 45-degree angle, turns in the bushings. This shaft is friction-driven from the flywheel by means of a small, rubber-tired wheel. Such a wheel can be had from a kiddie's toy automobile. Owing to the high speed at which this shaft turns, good lubrication is essential. This can best be had by drilling a hole in the center of the shaft and then radial holes to each of the bushings. A drop of oil applied in the hole at the top of the shaft finds its way to the bearings. A length of flexible, metal tubing conducts the air to the air intake of the carbureter.

The motor should be turned at as high a speed as possible. With a 2½-inch friction wheel, a speed of over 15,000 r.p.m. can be had from the average motor. The writer has used a homemade super-charger as described with marked success. To satisfy myself of its merit, I made a fan with reversed blades. In other words, I drew air away from the carbureter instead of forcing it to it. This operation decreased the motor speed by 800 revolutions per minute. So it is safe to assume that the use of the super-charger increased the speed of the motor above normal by one-half of the difference, or 400 revolutions. If this increase can be brought about with such a crude contraption, what would a properly designed super-charger do? Next season will tell.

However, regardless of what mechanical improvements may be added to an outboard motor; regardless of the adoption of a super-charger; the all essential element to the proper functioning of any two-cycle motor is perfect compression. Not only cylinder compression, but crank-case compression as well. In fact, of the two, perhaps crank-case compression is the more important. PLATE V illustrates a vertical cross-section of a

(*Continued on page 260*)

WINNERS . . . . because they trim down dead weight as an athlete trains off fat

Swish . . . watch the winners skim by. What drives them? Outboard motors that look like watches yet have the power and speed of race horses. Miracles in the conquest of dead weight—with added factors of strength and safety.

You have the strong Alloys of Alcoa Aluminum to thank for the development of these compact, powerful motors. Only through aluminum and its alloys is it possible to obtain the necessary strength with the lightness which is so essential. On certain parts of outboard motors where extreme strength and maximum resistance to salt water corrosion are needed, Alcoa Alloy 195 is the only satisfactory solution.

Be sure that the next outboard motor that you buy is built of Alcoa Aluminum Alloys and equipped with Lynite Pistons. ALUMINUM COMPANY *of* AMERICA; 2487 Oliver Building, PITTSBURGH, PENNSYLVANIA.

ALCOA ALUMINUM

NOW'S THE TIME
TO EQUIP YOUR BOAT
WITH THE ST. CLAIR
AUTOMATIC
SELF-BAILER

Fitting out time is here. Why not have a dry boat this year? Install the St. Clair Self-Bailer, the most valuable piece of equipment on a boat. Entirely automatic in operation, simple and dependable, it provides comfort, safety and pleasure by keeping your craft free from bilge water as well as dangerous gas fumes. It also releases bottom suction by forcing a layer of air under the hull, allowing INCREASED SPEED. Made of high-grade bronze. Supplied in Outboard, Standard, Heavy-Duty and Hydroplane models; also new "Si-Sun" Model. For every type of craft. Moderately priced. Write for literature, stating whether for inboard or outboard.

ST. CLAIR IRON WORKS
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Dept. "B," St. Clair, Michigan
Canadian Branch: Courtright, Ont.
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LYMAN CLINKER-BUILT OUTBOARDS

BUILDERS of good boats since 1875 and with a policy of constant progressiveness, LYMAN boats have been advanced to the highest state of efficiency and performance. They have an undisputed reputation for extreme speed with safety, and having been developed on the rough waters of Lake Erie will prove dependable everywhere. The characteristic LYMAN Clinker-Built construction produces a water-tight boat at all times and is not equalled by any other method.

A complete line of sturdy speed tenders, practical utility boats and fine runabouts in sizes from 8 to 17 feet. Send for catalog.

LYMAN BOAT WORKS
FOOT OF FIRST STREET SANDUSKY, OHIO

"Atta-Boy"

The Season's Sensation

Smart straight lines—Beautiful finish—Real speed—Perfect safety and comfort as well as guaranteed satisfaction are the privileges of the man who owns an "Atta-Boy."

The new Skowhegan Line offers Outboards, Rowboats and Canoes rightly built and rightly priced.

Write Today for Brand New 1930 Catalog

SKOWHEGAN BOAT & CANOE CO.
20 Hathaway Street, Skowhegan, Maine, U. S. A.

MORE POWER

(*Continued from page* 258)

typical twin motor, and indicates points where leakage—loss of compression—can occur. It also shows a simple means of checking up compression losses. This system should be employed by every outboard motor operator when his motor becomes difficult to start or has lost pep.

Figure 1 shows how to check up cylinder compression. Cylinder compression is often deceiving. One may rock the flywheel against compression and it may appear to be perfect. Perhaps so—in one cylinder. Since both pistons compress together it is impossible to certify positive compression by feel only. In fact, the spark-plug might be taken out of one cylinder, and the motor still would have A-1 compression by the feel of the flywheel. The only positive way is to check up with pressure gauges.

Old automobile oil pressure gauges can be bought for a few cents from any auto-wrecking place. It is not necessary that they should read accurately in pounds per square inch. These gauges are fitted into the bodies of two old spark-plugs and screwed into the cylinders. The flywheel is turned to bring the pistons up against compression and is held in that position and the gauges observed. If the indicating arrow on either gauge drops quickly to zero, it is positive evidence of loss of compression. It is possible that this loss may be around the spark-plug gasket. This can be determined by squirting a little oil around the gasket and watching for bubbles. Or it may be in the pipe fittings leading to the gauge. This can be decided by first testing the gauge and fittings under water as one would test a tire tube. If these minor points of possible leakage are found to be air-tight, then it is conclusive evidence that the loss is around the piston rings. In this case, new rings must be fitted. First, however, carefully examine the cylinder walls for scoring and check up the bore for out-of-roundness.

Figure 2 (PLATE V) illustrates how to check up crank-case compression. At some convenient and readily accessible point in the crank-case, a hole is drilled and tapped out for pipe fitting. It is then an easy matter to attach the gauge as shown. Now the pistons are brought against crank-case compression and the gauge is observed for drop in pressure. Of course, if the cylinders have shown a loss of compression around the piston rings, this same loss will occur when testing the crank-case. But if the cylinder compression proved O.K., then a loss of crank-case compression must be at some other point. It can occur around the cylinder base gasket, but this is unlikely unless the cylinder has been removed and replaced by a careless mechanic. Some crank-cases are in two sections—split along the center-line of the motor. Leakage could take place at this point. Loss of compression at either of these points can be determined with a squirt of oil.

Assuming that the cylinder compression has been perfect; that no loss has been detected around the gaskets; then a drop in crank-case compression must be around the motor main shaft bearings. In fact, this is the point where crank-case leakage occurs. The only permanent remedy is the fitting of new bearings. This work should be done by a highly skilled and painstaking mechanic. Accurate fitting main bearings are more essential in an outboard motor than in an automobile motor.

By checking up one's outboard motor occasionally and making such repairs as are necessary, one can always keep it in the pink of condition. A hard-to-start, stale-running outboard motor is a profanity inducing nuisance.

Besides fitting a super-charger, a motor often can be made more peppy by increasing cylinder compression. This is a simple matter if the motor has a removable head. Otherwise it is a questionable operation. Some motors permit the use of extra long-bodied spark-plugs. Sometimes these will contribute to a little more compression and add a few r.p.m. to the motor. Sheet aluminum plates can be screwed to the top of the pistons and give added compression. The use of these sometimes changes the inflow of the fresh gas and the outflow of the burnt gas and the result is a loss of power instead of a gain. The value of the plates can only be determined by experiments.

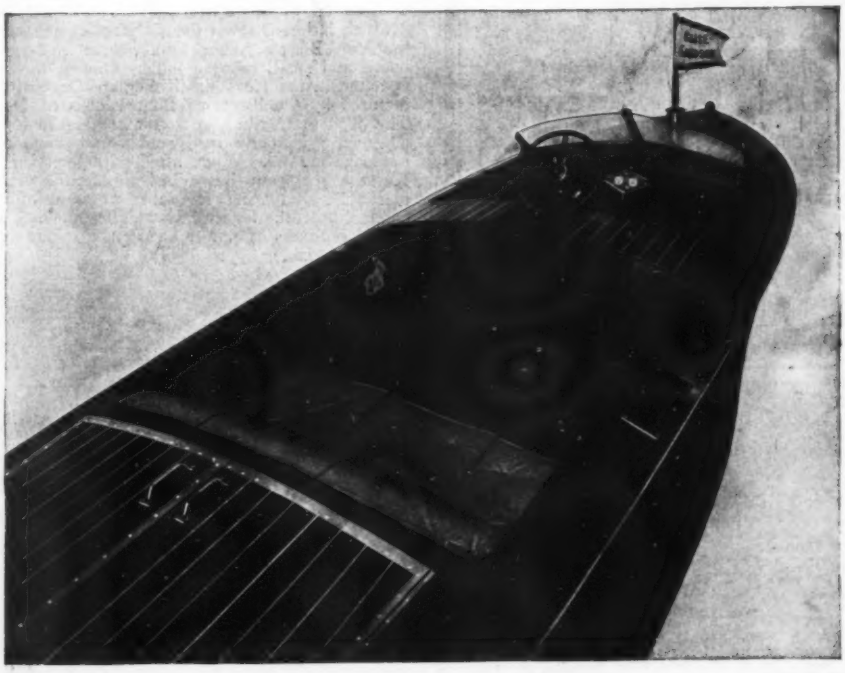
The past four years have brought about amazing developments in outboard motor construction. But the peak is by no means reached. 100 h.p., four-cycle radial type motors are bound to find a permanent place in the high-powered class. Twin cylinder, two-cycle slide-sleeve motors, powerful and economical, are coming. Twin screw outboard motors are now in the experimental stage. Next season will probably see their announcement. But in the meantime one can get plenty of kick from the present-day motor. Outboard motoring ranks as the great American outdoor sport. Are you a modern sportsman?

Advertising index will be found on 3rd last page

Facts That Can't Be Overlooked

In the New, Attractive Chase-Emerson Model 176:

(1) The attractive wind shield braced to withstand torsional strains. (2) Comfortable and modern auto equipment at steering wheel and instrument board. (3) Roominess of forward cockpit—no leg cramping. (4) Passage between cockpits. (5) Roomy lockers in rear cockpit. (6) Fine Kapok life preserver type cushions. (7) Step plates and hardware of the finest. (8) Stern drive to increase power and speed.



Forward view of cockpit in stern-drive model, showing spacious seating arrangements.

A few of the advantages that one can see in the photograph are listed, but what of those so vitally important to a motor boat that one does not see.

For instance, interlocking frame design employing Airplane construction for greater strength and reduced weight—the exceptionally deep free-board insuring a dry, comfortable boat at all speeds—the perfect stream-line from bow to stern and nationally known engines furnishing power—the even distribution of loads and ease of maintenance—the quick response at controls.

These and many other invisible features in Chase Emerson Motor Boats excite a thrill and pride of ownership you have long desired.

Write for complete information and booklet illustrating the famous interlocking frame.

A. B. CHASE-EMERSON CORP.

OFFICES: 11 WEST 42ND ST., N. Y. C. FACTORY: NORWALK, OHIO

CAPE COD BOATS

Don't Buy a Boat
Until you have received information on our boats, as we have several new models.

CAPE COD BABY KNOCKABOUT
This model is brought out to meet the demands of various yacht clubs and individuals, a number of yacht clubs having adopted this boat as a standard racing class. Some clubs have fleet of 30 boats. All Cape Cod boats are standardized built.

ROWBOATS
10, 12, 14 feet long. Of various models. Strong, well-built and safe.

RUNABOUT, LAUNCHES AND DORIES
New 16' Runabout with Van Blerck Jr., 20' Runabout. Niagara motor, 20' Special Dories safest sea-going boat built.

OUTBOARD MOTORBOATS
New sea-going boat for outboard motor; other models for general utility and high speed use.

SPECIAL ANNOUNCEMENT!

16' Speedcom with Van Blerck Jr., self-starter and reverse gear. Complete ready to run. Most seaworthy and fastest little boat built. SPEED 30 Miles. Order early as our production is limited. **$987** F.O.B. Factory

CAPE COD SHIP BUILDING CORPORATION
Builders of Standardized Boats
SHOW ROOM, MAIN OFFICE, AND WORKS, WAREHAM, MASS.
Boston Show Room, Rapp-Huckins Co., 138 Beverly St. Boston, Mass.
Branch Office, 18 Tremont St., Boston, Mass.

GOOD-WILL MOTOR BOAT TRIP

In April, a state-wide motor boat parade of 1,000 miles through the coastwise and inland waterways of Florida will get underway, sponsored by the Waterways Committee of the Florida State Chamber of Commerce, according to word received from Bensel-Brown Company, Jacksonville distributors for Dodge boats, a large number of which will take part in the itinerary. The number of boats participating has not yet been determined. The object of the parade is to attract attention to the work of the Waterways Committee in the improvement of Florida inland waterways by connecting up canals, lakes and rivers and clearing smaller streams for navigation. At each stop the members of the motor boat parade will be entertained by Chambers of Commerce and various civic clubs. Anumber of newspaper and magazine men are taking the trip and one day will be spent with Pathe News cameramen for the securing of fil for release all over the country.

The sponsors of the trip are Commodore Stockton Broome, of the Florida Yacht Club, Don Barnett, of the Ribault Yacht Club and Francis L'Engle, a prominent Florida motor boatman and attorney.

THE MONTH WITH THE OUTBOARDS

(*Continued from page* 248)

the new outboard racing rules, states that he is standing squarely behind them and the National Outboard Racing Commission. Such a declaration on Ferguson's part involves a considerable sacrifice and indicates his courage, inasmuch as it has been necessary for him to quit his business in order to secure a position that would permit him to race in Division II under the new rules. Although it costs him considerable, he feels that the majority of drivers want this rule or it would not have been carried. He says that he is going to stay in this class, since it is the only one in which he can race for records.

As is commonly known, Ferguson used a very light boat in hanging up his remarkable records. The new rules require heavier boats, which fact hit him rather hard. He knew that the line of work in which he was engaged would prevent him from racing as an amateur this year if he followed the ruling of the racing commissioners, so he accordingly gave up his work, obtained a heavier boat and set out quietly to get in trim to show the world that he is still the fastest human in an outboard.

POWER FOR LIGHT HULLS

Much is heard about the satisfactory performance rendered by the Van Blerck Junior light-weight high-speed motor in outboard and small inboard hulls. One of the typical installations is found in the Keystone Kollegiate Outboard Sea Skiff, manufactured by the Keystone Boat Works of Darby, Pennsylvania. The Kollegiate Skiff is a comfortable 14-foot family runabout designed principally for propulsion by one of the larger twin outboard motors. When fitted with the Van Blerck Junior, the Keystone company has found the Skiff's performance most remarkable, comparing favorably in point of control, speed and comfort with the larger inboard runabouts. Flexibility, quietness and smoothness of power output are salient features of the Van Blerck engine.

The 14-foot Keystone Kollegiate skiff operates remarkably well with an inboard Van Blerck engine

WESTERN COLLEGES TO RACE OUTBOARDS

Some eight or ten colleges in southern California have indicated their intentions of going in for outboard racing during the coming season. They are Occidental College, Fresno State, California Tech., Santa Barbara State, San Diego State, Whittier State, Pomona, U. S. C. and U. C. L. A.

The intercollegiate championship of southern California will be run May 3 at Alamitos Bay, Long Beach, California, in conjunction with a regular southern California outboard regatta. The Southern California Association voted at a recent meeting to give an honorary membership in the association to any regularly enrolled student who has an outboard motor in southern California for the next two quarters.

OUTBOARD REPLACES JURY SAILS

Up at Ucluelet, British Columbia, the outboard motor has replaced the jury rig sail. In the old days, when the sails or steam power failed and a lee shore threatened, the only hope of escaping the rocks was a jury rig of canvas.

Not so long ago Captain H. Wingen of the Vancouver power boat, Miss Vancouver, met the situation with the modern appliances. Outbound from Port Alberni to Queen's Cove, he broke his shaft and lay at the mercy of wind and waves and tide. Happening to have a small Lockwood motor on the boat, he rigged it and with its aid managed to keep in open water for ten hours. Toward evening the changing tide and rising wind overcame the opposition of the small Lockwood motor and permitted the skipper to control the craft quite easily.

(*Continued on page* 264)

Advertising index will be found on 3rd last page

10% to 50% Increase in Power

from engines that have been rewired and equipped with RAJAH Terminals.

Laboratory tests and the experiences of thousands of engine owners have shown that the full power of the engine can be secured by installing new ignition cable and RAJAH Terminals.

Your two hands are the only tools you need.

For best results, at little cost, specify RAJAH.

Order today from your dealer or send direct to us.

The RAJAH Company

Bloomfield, N. J.

RACE BOATS: $79 to $198

ASHBRIDGE K-D FLYERS WIN!

Lake Elsinore (sanctioned race) in rough water Feb. 22
Class B, Div. 2, Miss 233, 2nd place, with B Motor
Class C, Div. 2, Miss 233, 1st place, with B Motor
Miss Union, with 3 passengers, 1st place, Runabout
Ashbridge Flyer, 3 passengers, 2nd place, Runabout
N.O.A. RECORD RACING Rough Water RUNABOUT

½" Philippine Mahogany Stepless, 14x5x2—270 lb. Partially Assembled, $128

Also Rough Water Model D (New Model), 13'x8"x51" Beam—3-8" Bottom

California K-D Sponsons to keep boats from capsizing, easy to install; postpaid, $7.50

Built by C. E. Martin, Hollywood. Cups won May 1st to Sept. 5th with Caille Motor.

Full Size Patterns for Sanctioned and Light Boats, $10.00.

"Martin's Boat won 36 trophies in 1929 without capsizing."

ASHBRIDGE BOAT WORKS

Wilmington, Calif.

"Largest Manufacturers of Outboard Race Boats in the West."

PLAN YOUR BUDGET AHEAD...

So you may enjoy a HOOTON runabout this summer

The 13½ ft. SAFETY-PLANE Stepper
This famous model, winner of many marathon races, is a thrilling speeder. It planes this load easily with Class C motors or Quads.

THERE'S real joy in the new outboard motors and boats. Health, fun and wholesome companionship on the water will banish your cares, keep your youngsters happily busy, and make the wife's summer a success. For dependable performance, — buy a HOOTON!

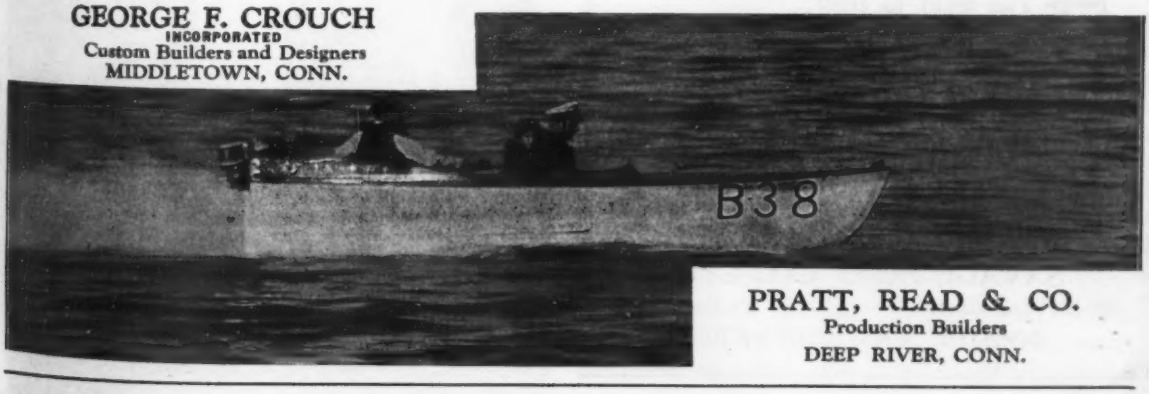
Dealers—Write us today

The 15 ft. RESORTER Runabout
A round-bilge family boat, of new planing properties and extreme dryness. It is wide, roomy, safe and beautiful. Speeds to 30 miles.

GORDON B. HOOTON — 505 Grandville Avenue — GRAND RAPIDS, MICH.

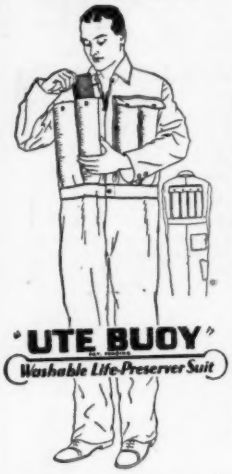
HARPOON RUNABOUTS
Speedy—Safe—Sane—Seaworthy. 16x4½ feet—$233.00 to $345.00

GEORGE F. CROUCH
INCORPORATED
Custom Builders and Designers
MIDDLETOWN, CONN.



PRATT, READ & CO.
Production Builders
DEEP RIVER, CONN.

Combination Coverall and Life Preserver Suit



"UTE BUOY"
Washable Life-Preserver Suit

Made of durable white herringbone drill (not waterproof) in one piece style. Entire suit triple needle stitched and bartacked at seams. Cloth is pre-shrunk. Talon Fastener down front. Two back pockets. Life preserver feature consists of two compartments in front, one large compartment in back, holding eight tubes of rubber filled with finest KAPOK. Rubber tubes vulcanized and easily removed for laundering. Compartments arranged to allow freedom of movement. Kapok can't come in contact with water. Wearer has double purpose garment—other life preservers unnecessary. Price $15.00, postpaid.

DEALERS: If your distributor does not handle the U T E-ility Line write us direct.

"UTE"
The All-Weather Utility Suit

NEW IMPROVED MODEL — One-Piece — WATERPROOF — WINDPROOF. Made of double texture cloth with rubber vulcanized in between. Rustproof Talon Fastener all way down front. Elastic wristband and concealed elastic waistband. Straps at bottom of legs, breast and side pocket, extra seat in pants and reenforced crotch. Detachable hood. Every seam fully cemented and strapped. Cut full. Khaki color $12.50, White, $16.50, postpaid.

Dealers: If your distributor does not handle the Ute-ility Line, write us direct.

UTILITY GARMENT CORP.
421-425 Arch Street,
Philadelphia, Pa. (dept. M.B.)

SAVAGE UNIVERSAL BRACKET
(Removable)

Makes the Outboard Motor
Your Auxiliary Power Plant

IF

- *The wind fails*
- *You foul your propellor*
- *Your motor fails*
- *You want to troll*
- *You want a reserve*

EMERGENCY
Power Plant

Recommended by All Outboard Motor Manufacturers

SAVAGE BOAT CO., LTD.
585 Boylston Street (at Copley Sq.)
BOSTON, MASSACHUSETTS

THE MONTH WITH THE OUTBOARDS

(*Continued from page 262*)

BOYD MARTIN COMPANY EXPANDS

William Robert Wilson, recently elected general manager of the Reo Motor Car Company of Lansing, Michigan, together with certain of his associates, has entered the motor boating field through the acquisition of a stock interest in the Boyd-Martin Boat Company of Delphi, Indiana. Mr. Wilson becomes chairman of the new organization's board.

John W. Eckelberry, secretary of the Allied Motor Industries, Inc., becomes president of the Boyd-Martin Boat Company under the reorganization plan.

Fred C. Martin, vice-president, will continue in active charge of production and engineering management.

Arthur R. Stubbs, who has been identified with banking institutions in Detroit and Boston, becomes secretary and treasurer of the Boyd-Martin Company.

A. W. Dailey, formerly with the Johnson Motor Company and who resigned there as sales manager last December, becomes the new director of sales and advertising.

With the Wilson interests taking over an important part of the Boyd-Martin management, the facilities of this well known organization are being greatly broadened through the addition of new equipment. Many of the new methods in production will be identical with those now employed in the larger automobile body factories. Modern equipment in the painting of boat hulls will greatly enhance the appearance of models now being put into production.

F. C. Martin, Vice-President; Arthur R. Stubbs, Secretary-Treasurer, and A. W. Dailey, Director of Sales, of the Boyd-Martin Boat Company

Concurrent with the plans of the new organization, improvements in design and construction are announced as applying to the well known Bullet racing models, the 16-foot Commodore Run-A-Bout and the 16-foot Mercury family hull. A new 14-foot junior model of the Kingfisher type, so widely sold by Boyd-Martin last year, is announced for this season.

Active production of these seven models under the new management started with the first of February. This impetus, together with a well defined and carefully laid out sales plan, has resulted in additional distributive outlets being added to those established since 1925, when the Boyd-Martin Boat Company was first organized.

(*Continued on page 268*)

Advertising index will be found on 3rd last page

FAYBOW "MIDDY"

An All Mahogany Outboard for the Family

HERE'S a boat you will be proud to own. It is the finest family outboard runabout on the market. A safe, seaworthy and sturdy sixteen-footer, whose construction embodies the best practices used in building the highest priced runabouts. All mahogany, brass screw and copper fastened and plugged.

Beautifully upholstered seats with lazy backs, seating capacity for six to eight, handsomely finished and equipped with the finest hardware, the FAYBOW MIDDY stands in a class by itself. Speeds up to 34 miles per hour.

The same hull as the Middy is now available in a lower-priced model. Ask us about it.

COMING!

Watch for important announcement on new FAYBOW 18-foot inboard runabout powered with 40 H.P. Lycoming engine. Deliveries this spring.

Write today for advance details

FAYBOW "MYSTERY"—A *Fast Racer*

A seaworthy racing craft and winner of many important races, including Finger Lakes Outboard Marathon. Two models: B and C class (weight 150 lbs.), and D and E class (weight 190 lbs.)

Write today for illustrated literature

FAYBOW BOATS, INC., GENEVA, NEW YORK

I always wear a

KAPO TOMBUOY VEST

in all my races—Bill Lyon

Outboard racers meet the emergency before it arises by wearing a Kapo Ceibasilk filled life saving vest. **Billy Lyon** prefers the KAPO TOMBUOY Style 7, a lightweight, comfortable garment—cut with generous armholes to allow freedom of movement. Priced from $6 to $8, according to chest measure. Look for the Kapo Ceibasilk trademark—it protects you. Send for illustrated catalog.

KAPO PRODUCTS CO.
151 Second Street
E. Cambridge, Mass.

14-year-old
Class B
Record Holder

THE

RAMSEYBOUT

IS THE REAL

FLORIDA PLAY BOAT

when powered with a
Van Blerck, Jr. Inboard Motor
or a
Class "C" or Larger Outboard Motor

THE

1930 HOOH RACERS

are built for the NEW OUTBOARD MOTORS
Weights Conform to N. O. A. Rules

Built by

A. H. RAMSEY & SONS, Inc.

P. O. Box 902 — 71 N. W. 11 Terrace
MIAMI, FLORIDA

New England's Leading Marine Dealer

Representing—

Dodge Runabouts	Corsair Cruisers
Lyman Skiffs	Porteus Boats
Ludington Boats	Mullins Boats
Duplex Marine Oil	Lycoming Motors
Kasson Grease	Ute Garments
Wilcox, Crittenden Hardware	Johnson Motors
Malabar Paint	Balubricote Paint
Doane Knockdown Boats & Plans	Stannus Propellers

Visit Our Showroom or Write for Information on Any of the Above Products

ATLANTIC RADIO & MARINE CO.
INCORPORATED
26 BROOKLINE AVENUE, BOSTON, MASSACHUSETTS

Our Spring Song:

TRY BEFORE YOU BUY

Come to Flushing Bridge and let us show you the boat best suited for your actual requirements

OUTBOARD MOTOR HEADQUARTERS
BRUNO BECKHARD
FLUSHING BRIDGE, FLUSHING, N. Y.

"SEA SPLIT"

Fast, safe—a boat for all the family—

IN rough or smooth water—away on an errand, off on a family picnic or just scooting around, it is an indescribable fascination driving a Sea-Split. She is sturdy, seaworthy, safe for all the family, gracefully trim-lined—the safest, fastest, Runabout ever built.

Six new 1930 models ready for immediate delivery.

There is still some very valuable territory open to progressive dealers. Write for catalog and information on Dealer's Franchise.

DEL-MAR-VA BOATS

SPEED CRAFT, INC. MIDDLETOWN, DELAWARE

BIKE BOAT

The Greatest Sensation in Boating

EUROPE'S LATEST AND MOST POPULAR SPORT

Ideal for Life Guards
Hunting — Fishing
Touring or Tender Service

Non-Sinkable
Non-Capsizable

The Bike Boat has crossed the English Channel in eight hours.

BIKE Boating, the rage at the elite beach resorts and watering places throughout Europe last summer, is now becoming popular in America. This new water sport is being received with unbounded enthusiasm because it provides a safe, practical and economical means of getting about on the water in addition to a pleasant form of health building exercise. Non-sinkable and non-capsizable, the Bike Boat is ideal for many forms of water sports and is safe for children and adults alike. To operate, simply pedal the bicycle mechanism which revolves the propeller and speeds you on your way. Steering is controlled by handle bars.

WRITE TODAY FOR FURTHER DETAILS

Very desirable discounts to Dealers, Jobbers, Concessionaires, Hotels, Resorts, and Camps. There's good money to be made handling this sure-fire hit. Get our proposition at once!

BIKE BOAT, LTD.
GENERAL MOTORS BUILDING
1775 BROADWAY NEW YORK CITY

LAKE ELSINORE GETS ROUGH

A GALE from the northwest made conditions ideal to test out the new heavy weight 1930 racing craft on Lake Elsinore, February 23, and the line-up represented boats from the shops of Smith, Ashbridge, Pierce, Ludington, Colberg, Wilber, Robinson, Sulmock and Elsinore, which representative gathering of California and Eastern products lined up to each show their stuff in the notoriously disastrous short-wave lengths of Lake Elsinore.

Nothing has ever been seen on these waters like the smooth balanced action of the 190-pound Blue Streak and the 160-pound Vagabond. It was in the Class B event that Blue Streak developed ignition trouble at the last minute, which left Elsinore unrepresented. It was won by M. C. Martin with a Sea Horse on an Ashbridge hull.

B. A. Wheeler and H. Morehouse proved themselves the star performers, the former driving a new Elsinore class C hull, equipped with an Evinrude and the latter driving Kitty, an Elsinore boat of more ancient vintage weighted up to conform with A. P. B. A. rules, and also equipped in like manner.

The closest, most exciting event was the Class D second heat, there being but one second between the winner T N T and Rowdy; and less than that between Rowdy and Lazy. These three contenders of excellent caliber were all visiting sportsmen from the north, who drove 600 miles with their equipment to attend this opening contest of 1930. The boating centers represented were: Sacramento, Oakland, Berkeley, Palo Alto and San Diego.

The Old Salts of many seasons' experience on Lake Elsinore, such as Al. Thomson and Chas. Holt did not unpack their equipment. With them, discretion is the better part of valor; Al. and Charlie are not yellow—perish the thought, we have seen them both time and again take the Hell-divers' degree with grace and come up smiling.

To obtain some idea of the real water conditions one has only to consider the time made and speeds negotiated. For instance, in the Class B, Div. II event, record speed for which distance is 39.47 m. p. h., M. C. Martin in an Ashbridge boat won it at 20.29 m. p. h.

B. A. Wheeler in a new 160-pound Elsinore hull made the best time of 8 minutes 59 seconds, or 33.39 m. p. h.

The Class D winner, Gordon Colberg, in his father's built boat, made the same distance in 9 minutes 11 seconds, or 32.67 m. p. h. Two runabouts capsized, which is unusual, in a race won by Don. Condit of 151 fame, driving Miss Union—an Ashbridge creation, doing 21 m.p.h. with a Johnson 25.

SUMMARY OF RESULTS

Class B, Div. II, 5 Miles

Boat	Driver	Motor	Builder	m.p.h.	Points
1. Miss 233,	M. C. Martin,	Sea Horse,	Ashbridge,	20.39....	761
2. Miss Glendale,	Dr. Steelman,	Sea Horse,	Smith		724
3. Buster III,	R. B. Jeffries,	Sea Horse,	Sulmock.....		361

Class C, Div. I

1. Vagabond,	B. A. Wheeler,	Evinrude,	Elsinore,	33.39....	800
2. Sunbeam II,	E. Hall,	Evinrude,	Ludington.....		613
3. Eline II,	Al. Williams,	Evinrude,	Ashbridge.....		361

Class C, Div. II, 5 Miles

1. Kitty H.	Morehouse,	Evinrude,	Elsinore, ...		761
2. Miss 233,	M. C. Martin,	Johnson,	Ashbridge,	23.136....	648
3. Sunbeam II,	E. Hall,	Johnson,	Ludington.....		400

Class D, Div. II, 5 Miles

1. T. N. T.,	G. Colberg,	Johnson,	Colberg,	32.67.....	800
2. Rowdy,	P. Holt,	Johnson,	Colberg.....		722
3. Lazy F.	Wilber,	Johnson,	Wilber.....		649

Runabout Race, 5 Miles

1. Miss Union,	Don Condit,	Johnson 25,	Ashbridge.....		400

THE RACING SITUATION IN FLORIDA

(*Continued from page* 250)

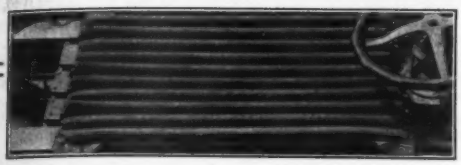
it is a grim business that seems to have banished any thought of boating for fun or racing as a sport. If any other states are interested in the Florida idea of racing for cash prizes only, of developing only professional drivers let them study results here. Let them compare these results with the definite effort that our northern drivers connected with the trade have made to further the interests of the amateur and the beginner. The new rules may not be perfect but they are at least right in maintaining that there is a place equally for the trade or professional driver and the amateur. Certainly without a growing amateur class there is no future for boating as a sport.

At all events I am a bull on Florida but a bear on Florida racing.

Advertising index will be found on 3rd last page

New! Airubber PAD and FLOAT

EVER SOFT, DRY, SAFE



MAKE your small racer or speed boat stop spanking you—drive in comfort and get more speed. The new improved Airubber Floor Pad and Float is a hit with the racing drivers. Multiple air chambers absorb jump shock. Low center of gravity maintained; pad never packs down or watersoaks; always stays dry. Lightest by far. Has brass grommets—tied in, helps buoy the boat if upset or swamped.

Makes swimming float or life raft. Popular on larger boats for deck cushion and bunk mattress.

Made of inside-rubberized, strong, durable khaki jean, with the exclusive Airubber construction—molded completely in one piece, no hand cementing. Interchangeable valve caps, for inflating any way. No. 511, size 20" x 36", weight only 3½ lbs. Price, $9.00.

Numerous other sizes—please write for details.

Trade Mark

The Neptune

Neptune Life Preserver

Official equipment on all U. S. Navy seaplanes, the Airubber Neptune Life Preserver excels for sport. Conveniently worn deflated as a vest. Two separate pairs of air chambers. Two or three blows in valve close to mouth inflate each pair. Weight 17 oz. Price, $5.00.

All last outfitters sell Airubber boating and camping equipment, including Mattresses, Pillows, Cushions, Rubber Boats. If not on display, please write us. New folders, prices, and 2-qt. camp water carrier FREE.

Airubber Department — **New York Rubber Corp.** Box 65 Beacon, N. Y.

World Leaders *in* Boating

Sweden and Germany have gone "ELSINORE"

Thirteen racing hulls have been ordered from these countries to appear at Berlin in June, Helsinfors in July, International Regatta Lido-Venice in September, and all minor European regattas.

Elsinore hulls scored 31 Official Records last season. Two European and two International. The championship of America and Germany.

World-famous pilots and personalities such as H. G. Ferguson, Carl Koeffler, Al Thomson, Loretta Turnbull, Anthony Fokker and Krueger of Berlin; John McCormack, world-renowned Irish tenor, and Count Andressy of Austria are enjoying ELSINORE speed this season in the new improved heavier models; more seaworthy, smoother in action and faster.

Send now for particulars

LAKE ELSINORE BOAT WORKS
ELSINORE CALIFORNIA

MoToR BoatinG

CAN BE BOUGHT AT YOUR NEWSSTAND

SAY TO YOUR NEWSDEALER

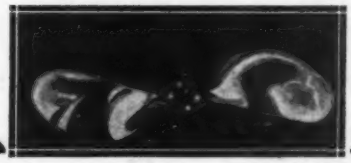
"SAVE ME A COPY"

HE WILL BE GLAD TO RESERVE YOUR

MoToR BoatinG

For You

EVERY MONTH



41 Straight Wins!

STANNUS PROPELLER CO.
—"the 41 straight races won with my Ludington Lightning during the past summer were won with a Stannus Propeller . . . I used the same wheel all summer."
—EARL GRESH

Dealers! Write for our new price list just off the press, giving sizes and styles! Your customers will be pleased with this wonderful propeller—this folder will help you select proper sizes for their boats. Write for it today.

STANNUS PROPELLER CORPORATION

4089 BEAUFAIT AVENUE
DETROIT : : MICHIGAN

Thompson BEATS the World on BOATS

THOMPSON BOATS

CATALOG FREE!

The best that skill and experience can produce—at real money-saving prices. Prompt shipment from factory to you.

OUTBOARD SPEED BOATS

Thompson's famous Hi-Speed Step Planes. Plane quickly, ride level and smooth and take sharp turns with safety. Will not "trip" when riding the wake of other boats.

OTHER OUTBOARD BOATS

Eight new speedy Models — Strong, comfortable and safe. For any outboard motor. Exceptionally seaworthy. Prices, $60 and up.

ROWBOATS

Square Stern Rowboats—Made both smooth sides and lap strake construction. Steady, seaworthy and easy to row.
Prices, $48 and up.

MOTOR BOATS

With or without engine. Strictly up-to-date 20 ft. models. Fast, handsome 6-passenger craft at money-saving prices.

CATALOG FREE — SAVE MONEY — ORDER BY MAIL

Please state the kind of boat you are interested in (37)

→ TWO LARGE FACTORIES ←

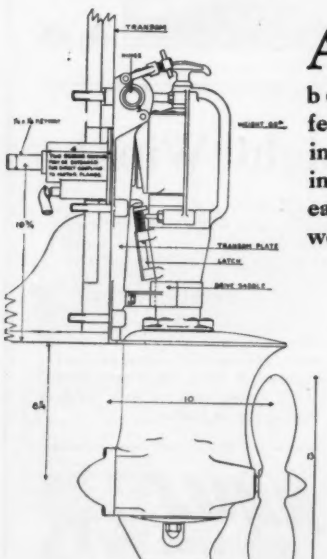
Thompson Bros. Boat Mfg. Co.

210 Ann Street PESHTIGO WISCONSIN

(Write to Either Place)

110 Elm Street CORTLAND NEW YORK

The New LINTHWAITE
INBOARDOUTBOARD DRIVE



A NEW series Linthwaite Inboardoutboard drive unit, featuring swivel steering, perfect stream lining, easier detachability, easier tilting and less weight.

Model DS can be supplied with reduction gear and right and left hand for twin screw installation. Model AS for Van Blerck Jr., Universal Blue Jacket, etc. Model DS suitable for Niagara HSS supercharged motor.

O. C. LINTHWAITE

4371 W. Tenth St. Los Angeles, Calif.

THE MONTH WITH THE OUTBOARDS

(*Continued from page 264*)

HUGE OUTBOARD PLANT OPENED

Convincing evidence of the tremendous interest in motor boating today and of the phenomenal growth of the industry is presented by the enormous new factory just opened at Penn Yan, New York, by the Penn Yan Boat Company, Inc., manufacturers of outboard runabouts, racing craft, dinghies and canoes.

The opening of the factory was an event in Western New York State's social and business life. The leading figures of the boating industry attended, as did most every one in that part of the state. In all, over 3,000 persons gathered in the new building on the night of February 12, to participate in the opening.

The event was the occasion of floods of congratulatory messages pouring in upon Charles A. Hermann, to whom must go the credit for the remarkable success the company has enjoyed under his presidency. The sincerity and enthusiasm of those who attended, as well as of the telegrams and letters received, are a remarkable tribute to Mr. Hermann's popularity.

Sharing tributes with Mr. Hermann was Ralph M. Brown, whose ten years of intensive research and experimentation were rewarded with the development of the new Pyroxlin Process, which has established new high standards of boat quality and done so much to popularize Penn Yan boats to the point where this tremendous production capacity is necessitated.

In addition to the new plant, Penn Yan will continue to operate its two other factories, promising a total production for 1930 which will establish new high records, exceeding by far the fondest hopes of the boating industry a few years ago.

UNUSUAL TEST PROVES CAILLE RELIABILITY

Imagine, if you can, the task of starting and operating an outboard motor in Alaska and Siberia. Not many of us would care to operate any motor under such conditions, but Lieutenant D. F. deOtte has just completed a long season of it, and reports enthusiastically upon the performance of his Caille Model 4C Admiral type.

Last spring Lieutenant deOtte decided to take a Caille with him to the Northland, for use in personal exploring trips apart from his regular work with the U. S. Coast Guard. The Caille motor was procured in San Francisco, together with a suitable hull, and sent north. Everywhere the boat went, the motor was a subject of much admiring conversation. All the villages north of St. Lawrence Island were visited—Gambell, Savoonga, Nome, St. Michaels, Shaktolik, Teller, Igloo, Kotzbue, and many others. A trip was even taken around St. Lawrence Bay, Siberia, where it created a great deal of interest, due to its reliable performance, and the speed of the boat. In fact, native chiefs at both Gambell and Savoonga have ordered Cailles for their own use from the local trading stations, and will make payment on delivery, not in money, but furs, the standard coin of the Northland.

Lieutenant deOtte comments enthusiastically upon the ease of operation and reliability which his Caille displayed, in spite of generally unfavorable conditions. His experience with the Caille has led him to predict a brilliant future for it among the tribesmen of the north, where service stations are few and far between, and motor performance must be faithful, day in and day out.

1930 BOOK OF BOATS

The latest edition of the Gray Book of Boats covering the 1930 line of Gray marine engines is now available for distribution. This booklet is prepared in an interesting manner, and contains over 300 pictures and letters from Gray users all over the world, showing Gray-powered boats in all kinds of service in many different countries. Copies of this booklet may be secured by writing the Gray Marine Motor Company, 6910 East Lafayette Avenue, Detroit, Michigan, mentioning MoToR BoatinG.

KNOW YOUR SPEED

Precise navigation calls for an accurate instrument for determining the speed of one's boat. An excellent device for this purpose is the Logometer, produced by the Irvin W. Masters Company of East Orange, N. J. It consists of a small impact tube which is attached to the boat's hull for the purpose of delivering a pressure of water to a register through the medium of connecting tubes. Extremely simple in its construction and installation, it tells at a glance the rate at which the boat is passing through the water, and, on some models, the total distance logged. The recording dial of the Logometer may be located in any convenient part of the boat, such as on the instrument board, in view of the wheel.

(*Continued on page 276*)

Advertising index will be found on 3rd last page.

MoToR BoATING'S Ideal Series

Volume X

The Outboard Motor Boat Book

Plans, Specifications and Building Instructions for Over 30 Craft of Various Types and Sizes Suitable for Powering with Outboard Motors

THIS is the book which everyone has been waiting for. The scope of the craft, plans, specifications and building instructions of which are printed in this volume, is very broad. Everything is included from the smallest rowing dinghy suitable for a Class A Outboard Motor up to the fastest Class C racing hydroplanes. Plans of some of the outboard racing boats which have established world's records are included. All of the boats are easy for the amateur or novice to build. If you wish to use the boat on the seaboard or inland waters or on some lake or smaller body of water you will find a design which is suitable. If you are partial to sail and use the outboard as an auxiliary to get home with should the wind fail, you will find a number of designs of these boats, too. The plans and designs are particularly clear and easy to understand and no previous knowledge of boat building is necessary to turn out a successful boat. You should not fail to have a copy of this book.

THE CONTENTS OF VOLUME X

RINKY-DINK, A 7-FOOT PRAM
A useful little dinghy for carrying one or two persons between the shore and the larger boat.

PIRATE, A MODEL SLOOP
A complete design for constructing an excellent little model sailing sloop which can compete in model races.

SKIPPER, AN OUTBOARD PRAM
An easily built little flat bottom speedster suitable for outboard engines in the smaller sizes, which will produce speeds up to about thirty miles.

HANDY-ANDY, A SAILING DINGHY
A simple little round bottom design fitted with a single sail which will furnish ideal sport for the skipper who is spending spare time while his larger vessel is at anchor.

JAN, A SAILING SKIFF
A ten-foot flat bottom design which will serve equally well as a dinghy, sailboat and outboard engine tender.

CARRYME, A UTILITY DINK
A useful little flat bottom dinghy which is easy to build and which will carry from three to four persons.

APPLE SAUCE, A FAST LITTLE SPEEDSTER
A simple little design for a fast outboard racer, which will do over thirty miles per hour with a suitable engine.

TAKAPART, A FOLDING PUNT
An original design for a small boat which is easily portable. Made in three sections which fit one inside the other so that it can be carried on an automobile.

ANABELLE, A 10-FOOT DINGHY
An excellent design for a 10-foot row boat arranged to carry three or four people and which can be used with any of the smaller outboard engines as a boat tender.

NYMPH, A 10-FOOT SAILING DINGHY
An attractive little boat fitted with a large sail and center board which will enable it to sail very nicely and which is also arranged to handle an outboard engine.

A 12-FOOT DINGHY
A first class design for a slightly larger outboard engine tender capable of carrying four persons.

JAZZ BUG, 12-FOOT HYDROPLANE
A fast little hydroplane which will handle engines of class B and with which it should do thirty miles.

SMARTY, A UTILITY BOAT
A 14-foot flat bottom dinghy arranged to handle under sail or under power of an outboard engine. Should be able to carry at least six people.

BUSTER, A 12-FOOT SAILING DINGHY
A round bottom dinghy of somewhat larger size, arranged for both sail and outboard engines.

SNAPPER, A SAILING DINGHY
A smart little round bottom tender, which can be used for much useful service in pleasure or work.

GANNET, A COMBINATION DINGHY
A roomy round bottom sailing skiff with a dagger type centerboard and a large main sail. Will handle nicely under sail and can be used with an outboard engine also.

GREEN DIAMOND, A FAST OUTBOARD
A 13-foot V-bottom hydroplane which has performed well in competition. It is designed for the modern fast outboard engine and should do 35 miles per hour quite easily.

DANCER, A 12-FOOT DINGHY
An inexpensive little boat designed particularly as a substantial flat bottom row boat for tender and ferry service.

WHIZ, A BABY HYDROPLANE
A sporty little speedster designed particularly for amateur construction arranged for use with an inboard engine of 20 h.p. with which it will do 30 m.p.h.

BABY STEPPER, A 14-FOOT OUTBOARD PLANE
A well tried and proven little design for a speedy outboard engine racing boat. Will handle engines up to class C with which the highest speeds will be secured.

SCANDAL, AN OUTBOARD MOTOR BOAT
A flat bottom dinghy 14 feet in length which will be suitable for tender service and similar work.

PIXIE, A V-BOTTOM ROW BOAT
A very able design for a large roomy row boat, capable of carrying a large load in passengers or baggage.

NONPAREIL, AN OUTBOARD ENGINE CRAFT
A design generally similar to that of Pixie but decked over for the greater part of its length so that it is much more sea-worthy and able.

MARYBELLE, A 14-FOOT RUNABOUT
An excellent little design for a useful little runabout, designed to be driven by an engine of about 10 h.p. with which it will perform very well.

SUE, A MOTOR SKIFF
A broad beamy 15-foot motor skiff arranged for an inboard engine of 5 to 6 h.p. With this it will do 6 to 7 miles per hour and will carry a very heavy load.

EDITH, A HAND 15-FOOTER
A V-bottom design for an attractive little runabout arranged with a small engine in the stern and passenger space forward.

TOTO, AN OUTBOARD RUNABOUT
An inexpensive and easily built 16-foot runabout designed particularly for the modern outboard engine. An able little craft which will carry five persons comfortably.

FLATTIE, A 16-FOOT UTILITY BOAT
A simple little flat bottom skiff designed for a small single cylinder engine, practical for many kinds of service.

WHIZ, AN OUTBOARD SPEEDSTER
A 16-foot stepless outboard speedster which is easy to build and fast enough for any one who does not care for extreme high speeds.

TRANSCO, AN OUTBOARD RUNABOUT
A sturdy and substantial 16-foot boat, built with lap-strake planking on a round bottom design. This boat will make a very able job for long cruises.

SEA SHELL, A SERVICEABLE BOAT
An excellent design for a 17-foot round bottom boat, suitable for rowing, sailing, or an outboard engine.

CANVAS-BACK, A CANVAS-COVERED CANOE
This design follows the typical canoe style of construction and has a square stern which adapts it to the use of an outboard engine. The boat is 17 feet in length and has a beam of 3½ feet.

GOZO, A PETITE SLOOP
A pretty little design for a 16-foot auxiliary sloop arranged for a small inboard engine. The cabin arrangement provides berths for two persons and this little boat will make an excellent cruiser for the young fellows.

Price of the Outboard Motor Boat Book, Volume X, Ideal Series $3.00

Foreign Postage 50 Cents Extra

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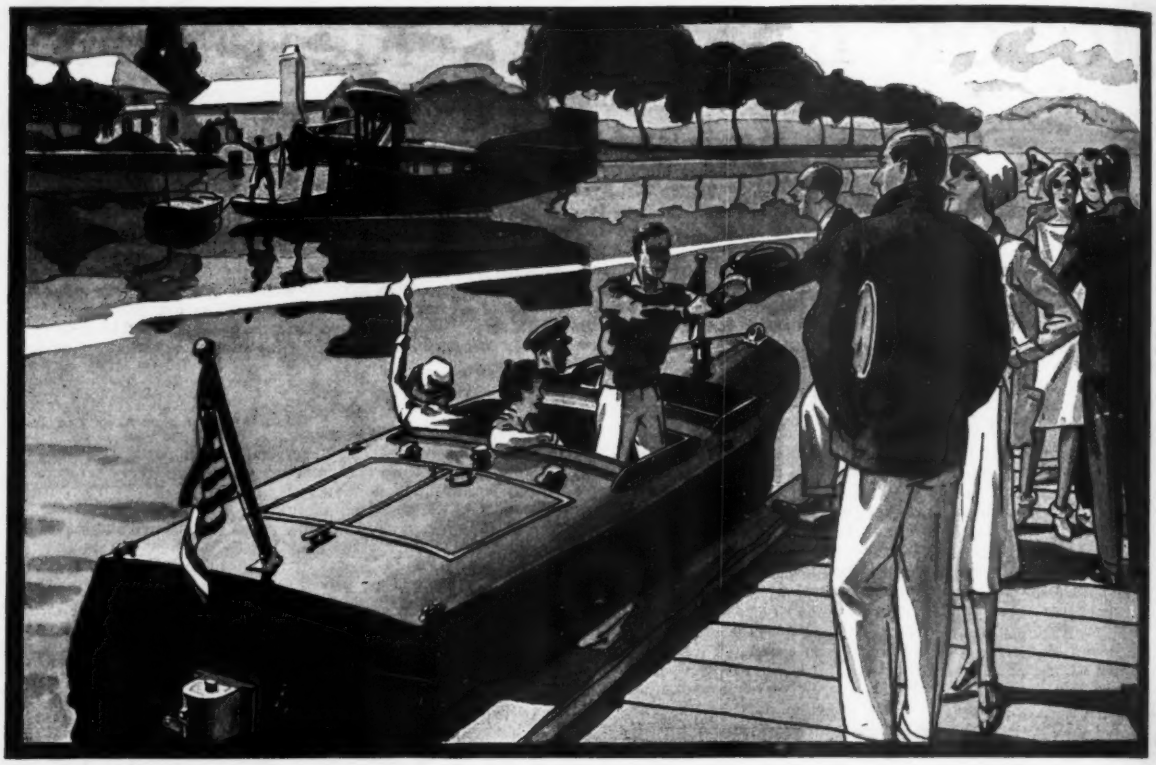

—and outboard racing craft that win the cups!

LIGHTNING — 11½ feet, for A Class Division 1 and 2; B Class and C Class Division 3. $240.

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ALL PRICES F.O.B. PHILADELPHIA

A Ludington Sportship

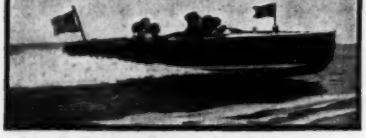
Yours . . . for $995

A trim little seventeen foot runabout,—sporty, speedy, dry and comfortable —that's your Ludington Sportship! When you're slipping through the waves at twenty-six miles per and hear the quiet hum of your sturdy Gray motor under the covered hatch aft, you'll know you're driving a thoroughbred— and you'll know that you've bought real value. She's seaworthy, is the Sportship — constructed of strong, single plank mahogany and built along airplane standards. She's reliable—driven by a reliable motor and maneuvered instantly at the touch of the wheel. She's comfortable—with deep, roomy seats forward that keep dry in any sea. And as for looks, no one will drive a prettier boat than yours, for your Sportship's scientifically designed for beauty and performance.

There's a real value here at $995—or the Sportship Senior, with refinements of construction, fittings and equipment—$1375.

Send the coupon for our catalogue and the name of your nearest dealer.

On display at Port Elco, 247 Park Ave., N. Y. C.; Port Ludington, 258 S. Broad St., Phila.; and other convenient locations.



The Sportship **— Length — 17 feet; beam — 62 inches; materials — airplane spruce, white oak, and genuine mahogany; fittings — chromium throughout; Gray Model 37 special engine; clutch, starter, forward control, outboard drive that gives instant maneuverability at the touch of the wheel. Completely equipped ready for use. The Sportship Senior — the same, with mahogany finish all 'round, and refinements of fittings and equipment.**

LUDINGTON
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108 Atlantic Building
Philadelphia, Penna.
BOAT DIVISION

Without obligation please send me your new catalogue describing

☐ Sportship
☐ Sportship Senior
☐ Racing Boats

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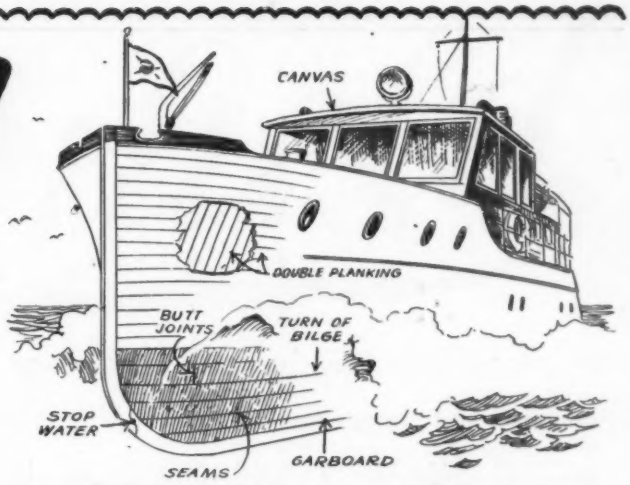
that are leak spots

JEFFERY'S
Waterproof
MARINE GLUE



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There is a Jeffery's Glue for any leak

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At all dealers everywhere

HARLEY *Speed* MUFFLER
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RECOMMENDED FOR ALL TYPES OF MOTORS

Low Installation Cost .50 — *No Pipes or Threads to Cut* — *Made Entirely of non-corrosive Metal*

Install this scientifically designed muffler within the after end of the exhaust pipe and avoid costly installation charges

SAVAGE BOAT CO. Ltd.
585 Boylston Street
BOSTON, MASS.
Sole Manufacturer and Distributor

Standard equipment on
Staples & Johnson Cruisers
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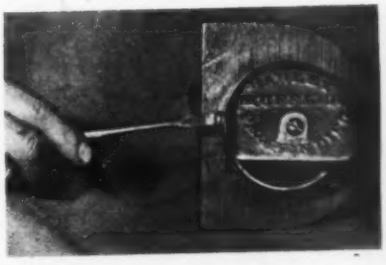
Robinson Seagulls



Install a Harley Muffler and Avoid your Neighbors' Complaints

Years of experience in successfully designing and constructing aviation and marine engines have enabled the engineers of THE VIMALERT COMPANY, Ltd., to produce in THE VIMALERT MH-12 and ML-12, a marine engine that possesses the unbounded power of a wide-open aviation engine, and which features, in addition, control and flexibility at medium and low speeds. **The design** of THE VIMALERT MH-12 and ML-12 is one that meets requirements of the most exacting boatman. Here is power combined with the utmost in reliability and efficiency. Here are concentrated all the qualities of smooth, dependable performance that bring complete satisfaction to every user. **The reverse gear** system of this engine was designed by one of the outstanding manufacturers of reverse gear units, and has a safety factor that makes it an extremely adequate system for this sturdy power plant. **Low fuel** and oil consumption are other features that go to make THE VIMALERT MH-12 or ML-12, the engine for your craft. **Write for descriptive folder to**

THE VIMALERT COMPANY, LTD.

835 Garfield Avenue, Jersey City, N. J.

Twelve Cylinders
5" Bore
7" Stroke.
400 HP at 1850 RPM
Weight 1800 lbs.
Water Cooled

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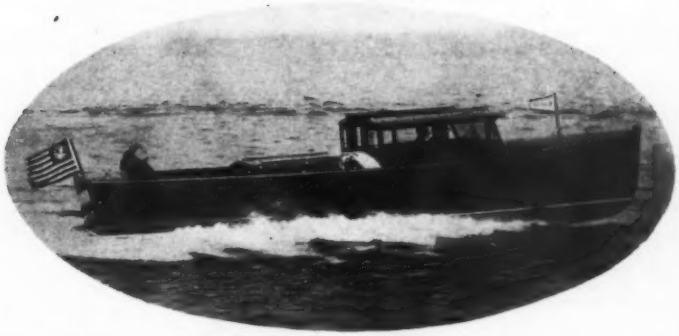
Banfield

Why Wait Until July?



Banfield "32" Sedan Runabout. Length, thirty-two feet. Beam, eight and one-half feet. Speed, 33-35 miles per hour with either 200 H.P. Kermath, Scripps or Sterling marine engine. Price, $7,100.

APRIL, MAY and JUNE afford some of the clearest, most ideal boating weather. Still too cool to swim, it is true—but a real boat lover shouldn't wait until midsummer to start week-end cruises or evening jaunts down some familiar stream into the bay, lake or ocean. The foliage along the river is still fresh and green, and what is a more glorious picture than the flower-bedecked banks of a wooded bay-shore in the spring? Take trips along the waterways that still reflect a cool deep blue of colder days that have past. Take a spin while the wind's still brisk and the sea has a bone in its mouth. Get on the water—the deep blue water—learn to live and have the zest to be alive. And while we are on the subject—have you a boat that you dare take out across the open bay or into the ocean beyond sight of land or must you remain within the confines of your own land-locked harbor or inland stream? Have you a boat that will go where a BANFIELD will go—speedily and in perfect safety?

Nine models of Sea Skiff Runabouts, Sedans and Cruisers, priced from $2750 to $7950. Speed up to 35 m.p.h. All models now on display at our new showrooms.

BANFIELD SEA SKIFF WORKS, INC.

PLANT:
ATLANTIC HIGHLANDS, NEW JERSEY

Sales Offices and Permanent Exhibit
254 Fourth Avenue, New York City

LARGEST BUILDERS OF
SEA SKIFFS IN THE WORLD

PERKO

Perkins Marine Lamp Corp.
1941 Pitkin Avenue
Brooklyn
New York

"PERKO" Lights for Cruisers and Runabouts

The great popularity of "Perko" Lights is due to their high grade construction and exclusive improvements—no other line has so many convenient features. Without unscrewing the fixture from the deck the bulbs in "Perko" Running Lights may be cleaned or quickly changed, a patented feature now obtainable in cast bronze lights for classes 1, 2 and 3 boats.

"Perko" Products include Running Lights and Lighting Fixtures for all marine service, and for boats of any size. They are standard equipment on many of the finest stock cruisers and runabouts.

Yachtsmen will find many good equipment suggestions in our 68-page catalog free on request.

FLEETWING 40

A Mobile Home for Seven

OTHER FLEETWING MODELS

Commodore 55 Ft. Off-Shore Cruiser 250 h.p. gear reduction twin Buda motors.

De Luxe 50 Ft. Express Cruiser, 350 h.p. twin Fleetwing Peerless motors.

De Luxe 40 Ft. Enclosed Model, 100 h.p. Buda motor.

Junior 28 Ft. 72 h.p. Gray Motor, $3,850.

11 Ft. Mahogany Tenders, special $150.

AT $10,875 the FLEETWING FORTY offers superior advantages in design, construction, comfort and seaworthiness. A 115 H.P. six-cylinder Buda motor drives the FLEETWING FORTY silently without vibration.

FLEETWING YACHT & SHIPBUILDING CORP.
153RD STREET AND HUDSON RIVER NEW YORK CITY

You are cordially invited to visit our showroom—via Broadway Subway to 157th Street, then across foot bridge at 155th Street, via auto W. 158th Street under viaduct, then to 153rd Street.

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HOLLEY DOWNDRAFT CARBURETOR

The Most Expensive Carburetor for Marine Engines But the Best

Used by

CHRYSLER, GRAY, KERMATH, LATHROP, LYCOMING,

SCRIPPS, SPEEDWAY and CHRIS SMITH

HOLLEY CARBURETOR COMPANY

DETROIT, MICHIGAN

MARBLEHEAD "34"
100 H.P. Kermath - Speed 17 miles
Write for Literature
STAPLES, JOHNSON & CO.
BIDDEFORD, MAINE
MARBLEHEAD'S are Displayed, Sold and Serviced by the following:
New York City—New York Boat Service Co., Clason Point; Stamford and Norwalk, Conn.—Motoryachts Co.; Toms River, N. J.—Toms River Boat Works, Inc.; Red Bank, N. J.—Floyd E. Brady; Boston, Mass.—Savage Boat Co., Ltd., 585 Boylston St.; Portland, Maine.—Albert G. Frost

OUTBOARD NOTES

CENTURY BOAT REORGANIZED

The Century Boat Company of Manistee, Michigan, has undergone a reorganization which puts them in a position to handle better the production of the outboard boats. The business was purchased in November of 1929 by George G. Eddy, who organized a new close corporation to carry out an extensive manufacturing and development campaign. John A. Hacker, son of the well-known designer, John L. Hacker, of Detroit and Mt. Clemens, was elected president, Ard E. Richardson, of Lansing, vice-president and treasurer, and George G. Eddy, of Manistee, secretary and general manager.

The ambition of these men of several years' standing was to produce and distribute a real quality craft in the small boat field, incorporating excellence of design, quality of construction and skilled craftsmanship in such a manner as to materially increase the market potentialities of the small boat. Nine models are now in production.

The first four men were hired on November 13 and John L. Hacker was commissioned to turn his genius toward the creation of the new boats. 50,000 square feet of floor space and complete woodworking equipment is so arranged as to make possible the greatest utilization of shop facilities for the production of quality craft, with the idea of reducing costs while at the same time maintaining exceptionally high standards of construction.

Today, four months after the inauguration of the new program, shows three models of fast outboard racing boats being built at the rate of nine a day. In addition a total of six of the 17-foot hulls are being built daily in three different models and are moving down the production line in rapid succession. The Traveler Junior is a big, husky, beautifully-lined outboard runabout suitable for all motors from 20 h.p. up. The De Luxe Traveler is the same hull with a triple cockpit arrangement seating six in luxurious comfort, controlling and handling the same as the other Traveler model. The new Mermaid model is undoubtedly destined to achieve the greatest popularity of all, being a 17-foot six-passenger runabout which combines outboard portability and inboard stability. A compact stern installation, entirely inboard, of Caille's new development in 22 h.p. powerheads driving through the new patented Hacker drive unit, with a Caille reversing propeller, makes possible wonderful performance qualities and full maneuverability in a 25-mile runabout.

The 19-foot Aristocrat model carrying the Universal Blue Jacket as standard power and driving through the Hacker unit, will remain a custom built craft. On special order it may be powered with other suitable engines.

Demand for the new Century craft has increased to a point where over 200 dealers are preparing to stock the complete line and approximately a hundred skilled workmen are employed on an overtime basis in an attempt to bring production up to a point where it will meet that demand. The Peterborough Canoe Company of Peterborough, Canada, one of the best-known Canadian builders of fine pleasure boats, are building Century boats for Canadian enthusiasts. Five foreign distribution points have been established and indications point toward a banner year for Century boats and Century dealers.

A GOOD WORD FOR THE COAST GUARD

The many comments which have appeared in newspapers and magazines lately throughout the country regarding methods of the coast guard in the enforcement of prohibition and the regulations requiring equipment aboard motor boats, prompts a correspondent (an American resident in Canada,) to write of his personal experiences in this connection. He states that he operates a cruiser for pleasure on Lake Ontario and its tributaries during the summer months. Three times during the summer of 1929 he has been stopped and boarded by the Coast Guard, ostensibly looking for life preservers, fire extinguishers and other legal equipment. At no time, he writes, was he or his guests subjected to any discourtesy or rudeness during the inspections. He voices the highest praise for their ability as seamen and their conduct as gentlemen. To quote his own words, "I am strong for the Coast Guard and feel much safer with them on the lake than I would with them off."

In further corroboration of his statements he cites the case of a recent rescue of two Canadian rum runners by the U. S. Coast Guard, their sworn enemies. An appeal to them for assistance from Canadian authorities brought immediate response and sent an American cutter to their aid. The rescued craft had drifted helplessly for 48 hours when the American boat located them and towed them in to port.

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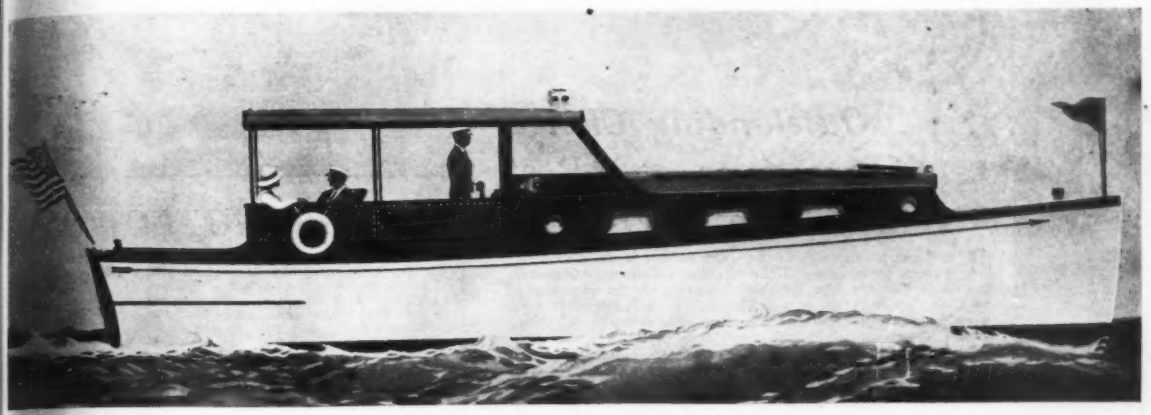
SEAWOOD "32" DE LUXE

Seaworthiness—Comfort—Economy—Speed



Length 32'0" **Beam 9'9"** **Draft 32"** **Speed—12 to 14 M.P.H.**

Length of Cabin, 8'6"	Length of Deckhouse, 8'0"
Length of Galley, 5'0"	Length of Aft Cockpit, 4'0"
Length of Toilet, 5'0"	Headroom Throughout, 6'1"

Clothes Closets, 2'3" x 2'0" each—full headroom.
Sleeping accommodations 6—4 in cabin—2 in deckhouse

Power Plant—85 H.P. Medium Duty—Six Cylinder Motor.
Keel—Selected white oak.
Frames—Steam bent clear white oak.
Garboard—Straight grain clear white oak.
Planking—Selected white cedar.
Fastenings—Copper rivets, riveted over burrs.
Decking—Side and aft decks polished Honduras mahogany.
Interior—Panelled with polished Honduras Mahogany.
Deckhouse and Cockpit—Cabin bulkhead and sides of deckhouse and cockpit panelled with polished Honduras Mahogany. Deckhouse roof mahogany tongue and grooved ceiling, canvas covered. Self-bailing cockpit.
Cabin and Deck Fittings—All exterior and interior fittings, hardware and electric fixtures chromium plated.
Floors—Cabin, galley, toilet and deckhouse, inlaid linoleum.
Tanks—Two gasoline tanks, 45 gals. each—one water tank 60 gals. capacity.

Equipment

ANCHOR AND ROPE
FENDERS
LIFE PRESERVERS
UPHOLSTERY
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FOG HORN
SHIPS CLOCK
TACHOMETER
BOAT HOOK
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SIDE CURTAINS
CUSHIONS
DRAPERIES
CHINA AND GLASSWARE
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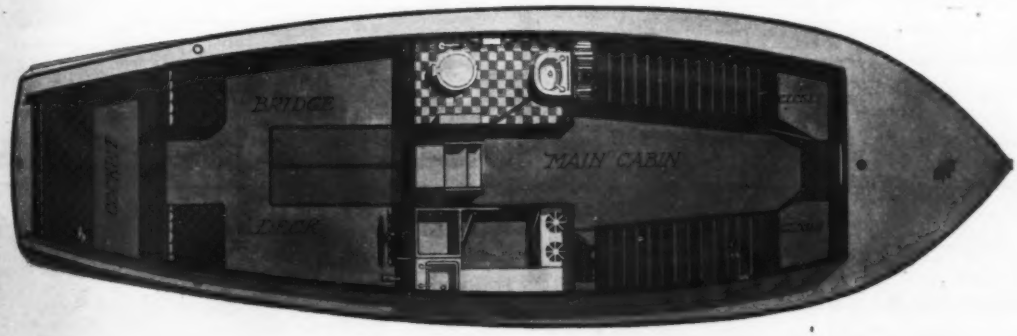
ICE BOX
BILGE PUMP
SEARCHLIGHT
STORAGE BATTERY
SHIPS BELL
BAROMETER
COMPASS
TOOLS



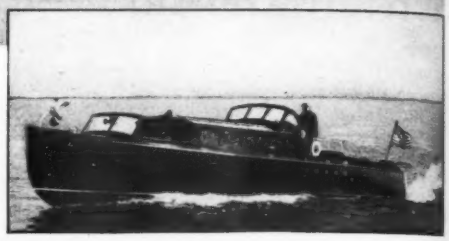
The next issue of this magazine will announce our new 25-foot Cabin Commuter—ample Cruising Accommodations and Speed to Spare—at a very low price.
Models of "32" Cruiser and "25" Cabin Commuter on display at our Showroom April 15th

Seawood Cruisers can be purchased on convenient monthly payments from income, distributed over one year.

SEAWOOD CORPORATION

16 W. Sixty-First Street at Broadway, NEW YORK, N. Y.

C-O-TWO



Outstanding Choice
of Architects and Boat
Builders for *SWIFT, SURE, FIRE PROTECTION*

THE notable increase in the specifications of the C-O-Two System by so many of the foremost architects, designers, and boat builders is a striking indication of the superiority of C-O-Two and the growing prestige it had gained in the eyes of these experienced experts. The wisdom of their choice is emphasized by the unsolicited testimonials verifying C-O-Two's unerring service in the protection of lives and property from fire on land and sea.

C-O-Two engineers give you the benefit of a vast experience in protecting millions of dollars worth of industrial and marine property with the identical C-O-Two system now available for all boats. "The C-O-Two Automatic System" (with separate remote manual control) is the original and first automatic fire extinguishing system, employing the use of harmless C-O-Two Gas. A most important feature of C-O-Two is its simplicity, fool-proof and unfailing dependability of control. The cost of absolute fire protection with the C-O-Two System is so reasonable as to make the consideration of any other, an expensive experiment.

C-O-Two is adaptable to any craft—from the smallest runabout to the largest yacht. A booklet and price list will be sent on request. Address the factory or nearest representative.

C-O-TWO FIRE EQUIPMENT CO.

3700 Mines Ave., Los Angeles, Calif.

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181 Stewart St.

CHICAGO, ILL.
MILTON G. HERBERT
Motor Boat Mart, Navy Pier

WILMINGTON, CALIF.
ETS-HOKIN and GALVAN
218 Avalon Blvd.

DETROIT, MICH.
C. T. CHENEVERT
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SAN DIEGO, CALIF.
CLEM STOSE
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NEW ORLEANS, LA.
ARTHUR DUVIC'S SONS
122 Charter's St.

VANCOUVER, B. C.
BOEING AIRCRAFT, LTD.
1627 Georgia St. West

ALGONAC BOAT HOISTS

IF you have a nice boat, why not keep it nice with one of these Hoists? You will be more than pleased with this easily operated and substantial hoist.

$140.00 to $300.00

Fully Guaranteed

Monnier Bros., Inc., Algonac, Mich.

LOBEE CIRCULATING & BILGE PUMP

You can't get a better or more reliable pump than the Lobee because there isn't a better one made. It has been the World's Standard of Pump Quality for 25 years. No other pump has proven so popular in the marine trade. Simple, compact, noiseless and positive. These pumps will outwear the engines to which they are attached.

Gear and Rotary Pumps from ⅜" to 1½" suction and discharge. Different designs for various types of drive and mounting made to order.

Write today for catalog and prices.
Sold by Leading Dealers Everywhere.

Lobee Pump & Machinery Co.
1790 Niagara Street, Buffalo, N. Y., U. S. A.

Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE

Outstanding Value in the Six Cylinder Marine Field

After a year of service in hundreds of boats of every type, from runabout to 40 foot cruisers and workboats, the WARRIOR is more firmly entrenched than ever as a leader of the really good low priced marine sixes. It offers an abundant and delightful flow of velvety power—characteristic Red Wing reliability and long life—and at a price never before possible for a motor of equal quality.

COMPLETE CATALOG DESCRIBING "WARRIOR" & 18 OTHER THOROBRED SIZES 4-150 H.P., MAILED FREE ON REQUEST.

RED WING MOTOR CO. RED WING, MINN. U. S. A.

The WARRIOR—6-cyl. 4-cycle. Bore 3¼ in., stroke 5 in. 230 cubic inch piston displacement. Speeds to 1600 r.p.m. Completely equipped. Grey iron or aluminum base types.

"WARRIOR" 30-50 H.P. **$495** WITH ELECTRIC STARTER

Advertising index will be found on 3rd last page

COPPER BOTTOM PAINTS

"New Jersey"

TOP SIDE PAINTS

When you use paint, get quality and save your boat

Insist on "New Jersey" Brands

They are used by all the leading boat builders who demand paints that will hold up under all climatic conditions

The Paints That Satisfy and Wear Longest

SHIP AND DECK PAINT

12 Popular Colors

Have you tried the new Color, Reddish Buff? It is the best Deck Paint and wears like iron.

COPPER PAINT

RED GREEN BROWN

Worms cannot hold on, you can haul out and find the bottom clean.

YACHT WHITE

FOR EXTERIOR WORK

Try this paint above the waterline. Stays white, can be washed and scrubbed. Excellent for cabins.

Sold by marine supply stores, or write to us for address of your nearest dealer

NEW JERSEY PAINT WORKS

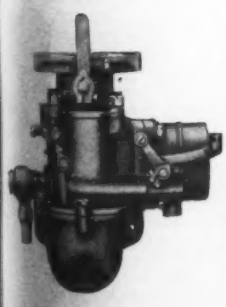
Wayne and Fremont Streets **HARRY LOUDERBOUGH, INC.** **Jersey City, New Jersey U. S. A.**

Write for booklet—"Davy Jones' Locker" giving valuable information on painting, sent free

Let Zenith Equipment Better Performance

MARINE CARBURETORS

Zenith's time-tested principle of carburetion, applied to marine requirements, has demonstrated its value in the Zenith Marine Carburetor. Positive, dependable action; no moving parts to affect the mixture; rugged, rust-proof construction. Rough seas or quick turns have no effect on engine performance. You can't afford to economize with Safety. That's why so many power boat owners have equipped with Zenith MARINE carburetion, and why it has grown steadily in favor. It sets a NEW standard in marine carburetor performance! Get the most Safety and Satisfaction from your power boat this year—equip with Zenith MARINE carburetion!



HIGH-EFFICIENCY FILTERS

Zenith *high-efficiency* filters are built in various models for every make and size of gasoline and Diesel engine. They remove ALL impurities at sustained high speeds and in the hardest service. Efficient in action, easy to install and clean, Zenith filters are sturdy and durable, with *no fragile parts.* Duplex Zenith models provide maximum safety if you frequent rough, off-shore water, strong current or tides. They protect your fuel pumps or injector nozzles. Prevent shutdown due to dirt and water—install Zenith *high - efficiency* filters.

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DETROIT MICHIGAN

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Is Friction Robbing You of Speed?

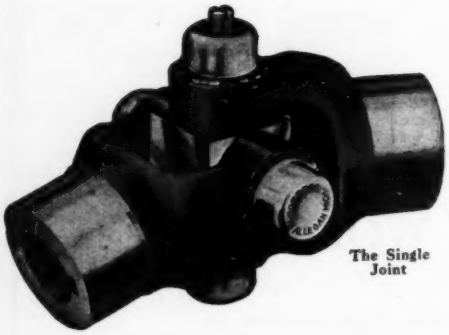
Is YOUR BOAT slowing, losing pep and getting sluggish? Are your fuel bills going up? The slightest disalignment of the drive shaft due to strains on the hull will cause unnecessary waste of power through frictional losses. ***To correct this condition install***

BLOOD-BROTHERS UNIVERSAL JOINTS

MADE in both double and single types, Blood-Brothers Universal Joints may be operated at unusually steep angles, compensating for any angularity or disalignment of drive shaft.

The Double Joint

More Widely Used Than Any Other Marine Joint



The Single Joint

Blood-Brothers Universal Joints are sturdily constructed, accurately machined and capable of transmitting up to 250 H.P. at 1000 R.P.M.

May We Send You Our Marine Bulletin

BLOOD-BROTHERS MACHINE CO.

PIONEER MAKERS OF UNIVERSAL JOINTS

ALLEGAN, MICHIGAN

FINISHING—UNDER PRESSING PRODUCTION COSTS

By A. J. SAXER,
General Manager, Climax Boat Paints

IT has been stated by many captains of industry that the big manufacturing problem is not production but distribution. In any manner of form they are equally dependant upon one another.

When your product is on display, finish is an indication of quality, that the customer recognizes. To them it is an index to the structural worth they expect to find beneath the surface. Considered from his standpoint finish is of utmost importance so clearly proven in the automotive industry.

In the path of a growing industry and in the face of such rapid strides, the boat builder of tomorrow must equip himself today to meet sterner competition. Progressive plant managers should soon realize that traditional materials and old fashioned finishing methods are lagging considerably behind present design, present equipment and modern manufacturing methods. It is no doubt hard for some of the old builders to realize just how fast the industry is growing, but they should make every attempt to visualize its strides.

Finishes, however, are not the only lagging process, but are so vitally important to the success of the product. Fine finishes have proven a most valuable sales aid in similar industries, therefore, he is a wise builder who employs the idea of beautiful finishes in his sales literature or program. It is quite impossible today for anyone in the finishing department of a boat plant to improve upon the products offered by a reliable paint manufacturer and particularly one who specializes in the making of paints for marine use. He would not have the oportunity for experiment, nor the facilities, though he had unlimited time and capital. Thoroughly experienced compounders are highly technical men, exceedingly well educated, both in theory and in actual application. They perform hundreds of intelligent experiments, in both formulating ingredients and in methods of application, which experiments are given every known test. They know the action and the reaction of every known oil and pigment in existence and the products offered you by their company, or the products they compound for experiment, are all made to formula, insuring the builder against any mistake in ingredients or the slightest variation of a shade in tints.

A reliable manufacturer buys his raw materials in such quantity and in such forms, that he can, beyond all doubt, properly compound a product and furnish it—a superior product—to the builder at less cost than the builder can possibly buy the ingredients for the attempt at duplicating that product, not taking into consideration any labor costs the builder would incur in mixing. The mixing of finish coats in the paint shops of the boat industry today is a practice well worth throwing out of the window.

In an attempt to determine the value of modern production methods, let all of us transplant ourselves to a body factory of the automotive industry, and see if it isn't possible to learn something of value from this highly competitive industry.

Our first impressions are positively paralytic, and we gasp for breath. However, lets look at what we are about to see from a purely production angle. Let's agree that the two basic elements that enter into the manufacture of either boats or automobiles, are men and material. It is possible for the builder to control both. From keels to yacht white, the very highest grade of materials are the most economical when the final analysis is made. The same thing applies to the men employed in the building of either cars or boats. Experienced and trained employees mean a better finished product with less corrective labor; and less corrective labor means more economical production—the exact thing we are looking into. Experience which is always costly, has taught us that a poor grade of finishing material, weakness of system or carelessness of operatives are invariably, individually or collectively the cause of finish failure.

The finish of automobile bodies begins with the smoothing and trueing of the metal surface, using portable grinding wheels, hand files and emery cloth. This process usually takes one man one hour after which the body is given a thorough inspection. Here is one method of the automotive industry that is equally important in the boat industry. Fairing the hull, working all of the straight lines out where the contour should be curves, true enough one can fair a hull with enough under-coats and putty and many sanding hours, but this is more costly than with the use of proper and sharp tools, and it is work improperly delegated to a paint foreman. The result of which is usually

(*Continued on page 282*)

Advertising index will be found on 3rd last page

All the Comforts of Home···PLUS!

That "different kind" of summer home you've been seeking is a cruiser of your own! . . . a home that can be moved at will—with smiling waters and trim decks for playgrounds. Luxurious cabins that are sunny living rooms by day and cool, restful bedrooms by night.

A sound, trim craft actually costs less than a summer home—is less responsibility and gives you infinitely more pleasure and freedom.

Complete galley equipment, including stove, running water and refrigerator, makes a full course dinner possible in no time at all . . . right on board.

And all this at a price of no more than you pay for a good car. Deferred payments, if desired.

There's a boat here for you now. Call at our showroom—bring your family and friends—and inspect it!

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The Midget Marvel of the Show

The BRANFORD
ELECTRIC LIGHTING PLANT

A thoroughly practical, independent electric lighting plant, weighing only 50 pounds, and requiring only 12 x 18 inches of floor space.

Supplies at all times a constant source of electric current for lights, fans, pumps, and galley conveniences.

No costly or cumbersome battery installation required. Simply wire the Branford Plant to your starting battery, lead the exhaust outside, and you are ready.

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WM. SYLVA, San Francisco . . . . No. California
CHARLES E. SMITH, Los Angeles . . . So. California
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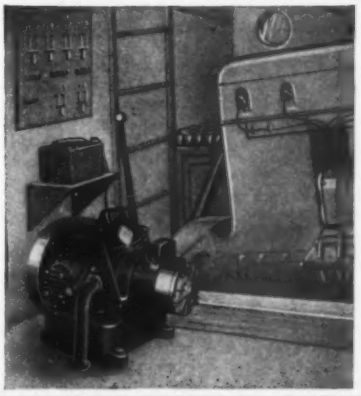
Price for the complete 6-volt system **$140**
12-volt system $145

"Its a Branford Product." For descriptive literature address Malleable Iron Fittings Co., Branford, Conn.



6-cyl. 4-cycle; bore 3⅜ in.; stroke 4½ in. 255 cubic inch piston displacement. Speeds to 2600 r.p.m. Also available with 2 to 1 reduction gear and extra heavy reverse, adding only 5½ in. to regular engine length.

Red Wing Thoroughbred
THE MOTOR WITH POWER TO SPARE

A New Medium Priced "6" of Brilliant Power and Speed

Here's the motor for your fast runabout or trim racy cruiser—combining the greatest power and quality that can be built into a motor of this size — smooth, dynamic power with the stamina, reliability and long life of all Red Wing marine motors. The specifications and equipment of this latest Red Wing will delight you. Furnished in grey iron or aluminum base types.

Write for new catalog showing Red Wing motors for every type of boat. 1 to 6 cylinders; 4 to 150 h.p.

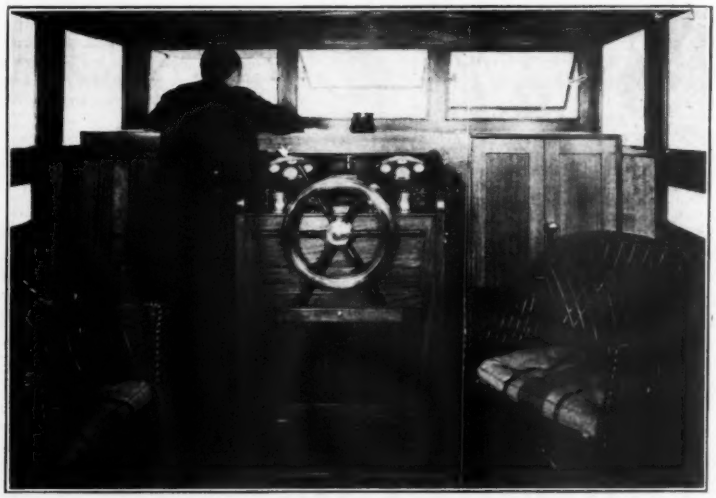
RED WING MOTOR CO. RED WING, MINN. U. S. A.

Genuine Mahogany *has no equal*

in boat construction because of its durability, dependability and beauty. Modernistic ideas can be enhanced by using rare hardwoods in natural finish for color contrast in combination with mahogany.

Read what Frank P. Huckins, president of the Huckins Yacht Corporation, says:

"We use your African Mahogany for all bright finished woodwork in our craft, due entirely to our conviction that it is the best obtainable for the purpose."



We carry millions of feet of African and Honduras Mahogany, 3/8" to 4" thick. We specialize in thin stock, 1/8", 3/16", 1/4", 5/16" and veneers.

For decorative purposes we have large stocks of

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and all other rare woods.

Beautiful interior woodwork characterizes the Fairform Flyer.

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The largest plant in the world devoted exclusively to the importation and conversion of Foreign Cabinet Woods. Established over 92 years.

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New York City

FINISHING—UNDER PRESSING PRODUCTION COSTS

(*Continued from page* 280)

a poorly appearing finish and many hours of extra labor in the paint shop. The fairing of hulls is a universal method in the boat industry today, but in many plants it is not as carefully scrutinized as it should be. This is a very important factor as a good fair surface to begin with is the base upon which the whole operation is laid and should be thoroughly done if a really beautiful hull is the expected resultant.

Let's continue and see how many of the basic principles of various processes used in the automotive industry we may adopt to the finishing of say a 36 foot hull.

Secondly in the finishing of an automobile body is the cleaning. The bodies are brushed all over with a chemical cleaner, this is washed off first with cold water followed with hot water. the hot water facilitates drying. Someone from the boat plant suggests that they can't see where this operation can be applied to a hull after it has been thoroughly sanded. The answer to this is easy. After fairing and sanding the wood, there is an enormous amount of dust in the grain and lying on the surface of the planks. Very small fibers that will lie in your paint increasing the roughness of your surface, accumulate and discharge heavily in places under the brush, increasing your sanding labor. A hull should be thoroughly brushed with a clean, full brush, before applying a first coat or wiped all over with a clean rag dipped in varnish, extremely thinned with turps. This will have a tendency to pick up all the dust and loose fibres, leaving the surface clean and free from all loose particles, assuring a maximum saturation and a clean application of the first coat.

Now we have reached the point where the seams must have consideration. A great majority of painters or foremen fill their seams previous to the application of the first coat, while there are some, who coat the seams first then fill them, and still there are some who apply a first coat allowing it to dry comparatively dry and then fill the seams. Surely the writer does not feel in a position to criticize any of these methods, for the compound being used must be seriously taken into consideration, and one must be governed by the action, and work ability of the compound to devise the most successful method. A little experience will teach us that raw wood will absorb considerable oil. In placing the compound into the raw seams before any form of priming coat is used, there is no doubt but what the wood will absorb a precious amount of the oil out of the compound. In a highly technical product, this absorbtion may have a tendency to materially change the compound and one's results may not be quite as gratifying. However, this particular step in finishing is worthy of a lot of experiment, as everyone has no doubt seen some very discouraging seams. The automotive industry fortunately does not have seams to contend with, but in their place have mouldings which were, at one time, very discouraging. A remedy for these troubles has since been effected.

Thirdly, in the automotive industry there is the process of undercoating the bodies. After the bodies are thoroughly dry from cleaning, the drying usually being done in an oven, they enter the spray booth, where the first coat of under-coats is sprayed on. The bodies then enter a baking oven, about 75 feet long, where the first coat is baked about forty minutes at 200 degrees F. After leaving this oven they are allowed to cool and air dry. Then follows a rigid inspection, filling all defects and low places with a glazing putty. After completely glazing all bad spots the bodies pass through an 80 foot oven requiring about 45 minutes at a temperature of about 160 degrees. This sets the putty, which is then scuffed off dry. Then follow three successive surfacing coats, usually a coat being sprayed at each end of a 100 foot oven. After approximately 1¾ hours of drying through these ovens, the bodies are wet sanded, using wet or dry sand paper, and sent to the lacquer spray booths, where the finish coats of lacquer are applied, they are then rubbed and polished, striped and are ready to be mounted.

Surely there are some points in this process that could be adopted to the boat industry, providing the proper materials and tools were used. Let us take our 36 foot hull, assuming that the seams have been filled, and apply one good coat of a white undercoater, that fills well and sands easily. Allow this coat to dry comparatively, then take a good easy working compound and thoroughly inspect and glaze the major identations. large pores, etc. Then apply a second coat of a good undercoater, over putty and all, not having any costly ovens, and not being able to use them if we did have them, we will have to wait for our second coat of undercoater to air dry or flatten

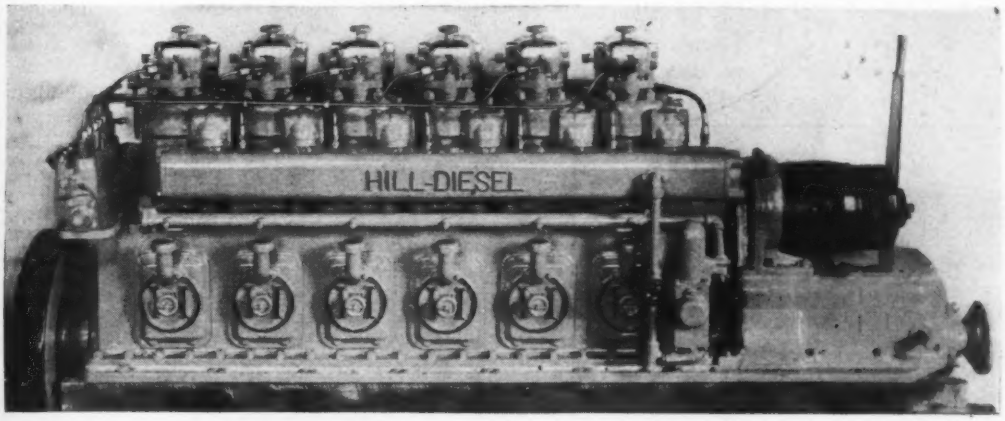
(*Continued on page* 284)

Advertising index will be found on 3rd last page

WHY GAMBLE WITH THE FIRE HAZARD
WHY WASTE MONEY ON EXPENSIVE FUELS ?

HILL DIESELS ARE SAFE—ECONOMICAL AND RELIABLE

BUILT IN A SIZE FOR YOUR BOAT



HILL DIESEL ENGINE COMPANY

248 MILL STREET LANSING, MICHIGAN U. S. A.

INTERNAL COMBUSTION ENGINES SINCE 1899 DIESELS EXCLUSIVELY SINCE 1926

RUDDOCK 46-FOOT TWIN-SCREW CRUISER

An Unusual Seaboat with Many Outstanding Features

DESIGNED especially for the utmost in cruiser comfort and ruggedly built for off-shore cruising, the RUDDOCK Forty-Six Foot Double Cabin Bridge Deck Cruiser, with eleven foot beam and twin 65 H.P. engines, has many advantageous features distinguishing it from the average boat of standardized construction. Furthermore, it is priced unbelievably low for a craft of its type, quality and performance.

Write today for full particulars.

IMMEDIATE DELIVERY

The Ruddock 46 guarantees you:—

Primarily a powerful seaboat, blended with grace and beauty. Tough construction for a life-time of service. The extra safety factor and added power of twin screws. Entirely finished in mahogany. Generous accommodations for owner, guests and crew. Completely equipped, ready to cruise, including Protane stove, electric bilge pump, Homelite electric plant, screens, ropes, anchors, cushions, floor linoleum, etc.

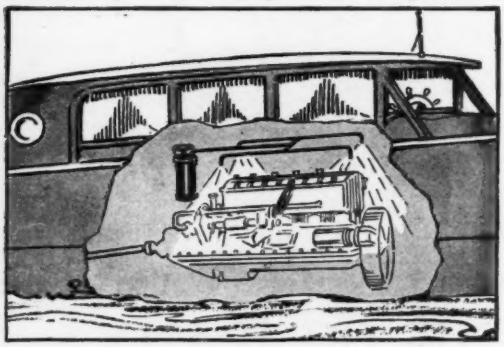
THE W. F. RUDDOCK BOAT and YACHT WORKS, INC.

GREENWICH, CONNECTICUT

Quickly Recharged Afloat

Ready for a Second Alarm

Constant safety aboard ship . . . compact easy installation . . . low-pressure operation . . . simple manual or automatic control . . . recharges in all ports.



Fire often breaks out twice in the same spot.

The new Pyrene extinguishing system instantly smothers fire in the engine, bilge or galley . . . *and the empty extinguisher can be quickly recharged.*

Then if the fire breaks out again, as it so often does, you're ready for it.

Recharging while afloat is easy. You simply pour a recharge into the extinguisher. Then pump to one hundred pounds of air pressure with the built-in pump and you are all prepared for another emergency.

Let us send you full particulars about the new Pyrene system and its installation.

Pyrene Manufacturing Company
NEWARK NEW JERSEY
ATLANTA KANSAS CITY CHICAGO SAN FRANCISCO

NEW PYRENE FIRE PROTECTION SYSTEMS

FINISHING—UNDER PRESSING PRODUCTION COSTS

(*Continued from page 282*)

to such an extent that we may apply our third coat of easy sanding, easy working undercoater. After this third application of white filler and sanding coats, there should be sufficient material on the hull to fill all the grain and low places and allow a thorough sanding, bringing the surface down to a good smooth surface, leveling down all the high spots to a comparative level with the low places. Now let us turn back to our progressive brother in the automotive industry, and borrow some of his wet or dry sand paper No. 180, then get a bucket of water and a sponge and wet sand our hull good. We will come to the conclusion beyond a question of doubt that two sanders will accomplish more using wet or dry paper, than four men can possibly accomplish in the same time using the old dry paper method. After thoroughly wet sanding the hull, we must allow some of the surface moisture to evaporate then we can proceed with two finish coats. And the white on our hull is complete. This process, however, in the boat industry, is not fiction and it is not an experiment to be tried. It is an absolute fact, being successfully used by several of the builders at the present time, and can be used by any builder on either wood or steel hulls. A succesful finish with varnish may be excedingly speeded up, by the use of wet or dry sand paper, sanding with gasoline or water, and the ultimate finish is much more beautiful than the finish accomplished by the old dry paper method of sanding. Production cost will seriously drop when the more modern materials and methods are resorted to.

Many builders ask if a spray gun may be successfully used in boat painting. This question may be answered in this way. The success of the spray gun in the boat industry would depend entirely upon the experience of the man using the gun. The successful use of an air brush, requires years of experience in using them. The more difficult the object to be painted, the more experienced the operator must be. A boat being a difficult object to paint with an air brush, one would hardly expect an old time finisher, characteristic of the paint shops in the boat industry, to pick up an air gun and successfully paint a boat with it. This is just about as absurd as to ask an old engineer on a railroad to come over and successfully fly a new tri-motor Fokker aeroplane. Surely a finishing foreman in an automotive body factory would not look in the paint shops of the boat industry for a spray man. So if you feel determined to spray your hulls, for the sake of your product, employ a thoroughly experienced sprayman, in which instance satisfactory results can be obtained.

The formula is simple:—

1. A thoroughly clean surface and a thoroughly faired surface as a foundation.
2. Proper high grade finishing materials, that are workable for their purpose.
3. Sufficient application properly applied using the proper brushes. (Remember you can't successfully put paint on with a broom).
4. Frequent inspection and careful and intelligent workmanship.
5. Economical production is accomplished not by reducing the number of coats, but by the use of modern tools and equipment.
6. Get all information and try the most modern materials and the most modern processes, for some materials are costly if they were given to you.
7. Have an open mind, watch the other fellow and insist upon efficiency in your plant.

The enormous costs of the installations of the large ovens in the automotive industry, the excessive costs of operating these, the use of modern materials, the efficiency of sanding by using the modern wet or dry paper, in fact the whole process was brought to the door steps of this industry by stern competition and highly competitive bidding for the business. There is not only one but several of the old automotive plants that were left at the cross roads because they would not modernize or did not become aware of the fact until it was too late. Here is your answer to these old archaic, horse-drawn, costly methods still in use in the majority of boat plants in this rapidly growing industry. Habit is a wonderful thing, the writer will admit, but new tricks are coming, in fact they are here, and the more progressive builders are gradually seeing the reflection. It is positively insulting to the industry the way some boats are finished. Many a barn throughout the country is the proud possessor of a better paint job than some boats that have been displayed. And woe-be to Mr. Builder who doesn't suddenly recognize this fact.

As has been stated before, appearance is going to be a vital factor in the sale of boats and it's a wise builder who employs this aid in his sales efforts—"A thing of beauty is a joy forever."